COMPENDIUM OF PROCEEDINGS

OF

CENTRAL SUB-COMMITTEE ON CROP STANDARDS, NOTIFICATION & RELEASE OF VARIETIES

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DEPARTMENT OF AGRICULTURE & COOPERATION

MINISTRY OF AGRICULTURE

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Dated : 8th January, 1997

FOREWORD

A large number of improved cultivars of agricultural and horticultural crops have been released and notified since May 1984 by the Central Seed Committee on the recommendation of Central Sub-committee on Crop Standards, Notification & Release of Varieties. Necessary information relating to varietal characteristics, their adaptability to a specific ecosystem, release and notification status of these varieties is not available at one place. Besides this, the proposals for release/notification of a large number of varieties were deferred/rejected by the Central Sub-committee during the said period due to various reasons. It was, therefore, felt necessary to compile this information for the use of seed producers, seed certification agencies, researchers and development departments. The Compendium of the Proceedings of Central Sub-committee on Crop Standards, Notification & Release of Varieties comprising various decisions relating to release and notification of varieties and necessary information on released and notified varieties will be a useful publication.

Sd/-

(N. RAMA RAO)
Joint Secretary to Govt. of India

CONTENTS

PAGE NO.

1. Proceedings of the First Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 25-26 Sept 1984 . . 1

2. Proceedings of the Second Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 24-1-85 . . 39

3. Proceedings of the Third Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 25-3-85 . . 59

4. Proceedings of the Fourth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 20-8-85 . . 79

5. Proceedings of the Fifth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 28-1-1986 . . 107

6. Proceedings of the Sixth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 16-5-86 . . . 131

7. Proceedings of the Seventh Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 11-12-86 . 155

8. Proceedings of the Eighth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 13-7-87 . . 183

9. Proceedings of the Ninth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 2-11-87 . . 203

10. Proceedings of the Tenth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 24-3-88 . . 225

11. Proceedings of the Eleventh Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 11-10-88 . . 247

12. Proceedings of the Twelfth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 13-2-89 . . 275

13. Proceedings of the Thirteenth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 9-6-89 . . 309

14. Proceedings of the Fourteenth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 1-9-89 . . 327

15. Proceedings of the Fifteenth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 28-2-90 . . 357

16. Proceedings of the Sixteenth Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties for Agril. Crops held under the Chairmanship of DDG(CS), ICAR on 15-6-90 . . 397

Proceedings of the First Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 25th and 26th September, 1984 under the Chairmanship of Dr. M. V. Rao, Deputy Director General (CS), ICAR, New Delhi.

List of the participants is attached at Annexure I.

2. The Chairman welcomed the members to the First Meeting of the Committee and enumerated the brief background of merger of three Central Sub Committees namely Central Sub Committee on Release of Varieties, Central Sub Committee on Release of Varieties for Horticultural Crops and Central Sub Committee on Crop Standard and Notification into one Sub-Committee. He further mentioned that the guiding principles behind merger of the three sub-committees into one is to reduce the time-gap between the release and notification of the varieties. Therefore, it is the duty of the Committee to discharge its functions in such a way that every good cultivar developed in any part of the country by any institution/authority is not made to wait for its release and notification and at the same time, a bad cultivar is also not allowed to enter into the seed programme of the country. If this is achieved, this will be a 'yoeman' service to the Indian Agriculture.

3. Chairman also enumerated the advantages of the testing of the varieties, evolved by various agencies for specific areas of a State, into the coordinated trials of the crop concerned. The results of the co-ordinated tests would not only indicate the correct status of the cultivar with regard to its agronomic potential but also reveal the resistance of the variety against the important diseases and pests. Thus the results emanated under the Coordinated Projects would supplement the information to help the Committee to evaluate the cultivar for its release and notification in an objective and scientific way. However, he made it very clear that testing of the State varieties under Coordinated trial does not necessarily mean that to qualify for notification it should find place among top ranking varieties of the country or the zone but it should positively prove good in comparison to the existing and other varieties in that particular State for which it has been bred and released. Therefore, the data generated at various locations in the concerned State would only be taken into account at the time of evaluation of the variety for its notification and not the overall performance of the variety shown throughout the country. However, if a variety proved best in other parts of the country, it will be an added gift to the farmers of the other States.

4. The Committee suggested the following steps to be taken in future for correct evaluation of the varieties:

(i) if more than one proposal of the release of varieties of the same crop from same or other agency and for the same area of adaptability are received, the concerned Project Division/Coordinator should be approached to submit a comparative statement evaluating each variety against one another so that the Committee could evaluate the proposal quickly and correctly.

(ii) in the notification proposal, if recommendations of the All-India Workshop is not indicated by the sponsoring authority, the proposal should immediately be referred to the Project Coordinator to send his advice so that a final view about the variety on its notification is taken in the meeting. This will eliminate delay.

(iii) incomplete proposals received for release or notification should immediately be returned to the sponsoring authority for resubmission of the complete proposal.

(iv) instances have come into the notice of the Committee where the same name for different varieties and different names for the same varieties are used. To avoid such situation, it is suggested that agencies procuring the varieties should submit at least three names in order of preference to the concerned Project Coordinator to obtain his comment before christaning the variety.

(v) keeping in view that the sub-committees on Release and Notification of the varieties have been merged together, it might be ascertained whether there is a need to revise the existing proformae meant for submission of the proposal of the release and notification. The Secretariat of the Committee will look into this and make a suitable proforma and circulate to all members for comments. The finally approved proforma will be sent to all agencies producing the varieties.

5. It has been observed that some of the Members of the Committee usually sent their nominees, therefore, it should be examined whether nominees of the members could attend Meeting of such statutory bodies. The Director (Inputs), Member-Secretary of the Committee informed that this position would be analysed in consultation of the proper authorities and the exact position would be clarified to the Committee in its next Meeting.

6. After that, the Committee took up the proposals received for release and notification of the varieties and decision of the Committee is indicated as follows:

Item No. 1: Consideration of the proposals for release

48 proposals of various varieties of different crops were evaluated for release. The observations of the Central Sub-committee on Crop Standard, Notification and Release of Varieties on each proposal is enumerated as under:

Details of the Varieties recommended for Release and Notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Cowpea	Amba (V-16)	Recommended for release for cultivation in Kharif season throughout India and also for Rabi spring cultivation in Peninsular India.
2.	Green gram	S-9	Recommended for release for cultivation in Haryana State under rainfed condition.
3.	Green gram	K-851	Recommended for release for cultivation in whole of Haryana State under assured rainfall or irrigation condition. The variety also stand notified vide S.O. No. 19(E) dated 14-1-82.
4.	Green gram . . .	Pant Moong-2	Recommended for release for cultivation in North Plain East, North Plain West and Central Zones of the country.
5.	Gram	Gaurav (H-75-35)	Recommended for release for cultivation in whole of Haryana except the areas where there is no provision for irrigation.
6.	Gram	GNG-146	Recommended for release for cultivation in North West Plain zone of the country.
7.	Gram	Pusa-240 (BG-240)	Recommended for release for cultivation under rainfed and irrigated conditions in the States of Uttar Pradesh, Bihar and West Bengal.
	Moth-bean	Jawala (PCMO-926) (UUM-1007)	Recommended for release for cultivation Zone IIA including Nagpur, Sikar, Churu, Jhunjhunu and other districts like Bikaner, Jodhpur and Barmer (Zone IA) of Rajasthan. And also North plain zone growing moth crop of the country including arid and semi-arid conditions.
9.	Arhar (Red gram)	T. Vishakha-1 (Trombay Vishakha-1)	Recommended for release for cultivation in Peninsular zone.
10.	Linseed	Himalini	Recommended for release for cultivation in Linseed growing areas of Himachal Pradesh, Punjab, Haryana and Rajasthan.
11.	Linseed	Pusa-2 (L.S. 2)	Recommended for release for cultivation in both irrigated Barani conditions in Peninsular Region (Madhya Pradesh, Maharashtra, Orissa, Karnataka and Bundelkhand of Uttar Pradesh) and North Western Region (Haryana, Punjab, Rajasthan and Himachal Pradesh).
12.	Linseed	Pusa-3 (L.S. 3)	Recommended for release for cultivation in North Western region (Punjab, Haryana and Rajasthan).
13.	Indian Mustard (Raya) . . .	RH-30	Recommended for release for cultivation in Haryana State.
14.	Mustard (Raya or Laha) (*Brassica juncea*) Czern and Coss .	Pusa Bold (DIR-50) (L)	Recommended for release for cultivation in Eastern Zone.
15.	Soyabean	PK-308	Recommended for release for cultivation in North plain zone (Punjab, Haryana, Delhi, Uttar Pradesh, Bihar, West Bengal, Assam and Orissa).
16.	Soyabean	MACS-13	Recommended for release for cultivation in Central Zone.
17.	Bajra	HC-4 (MP-19)	Recommended for release for cultivation in Bajra growing tracts of the country.
18.	Bajra	MBH-118	Recommended for release for cultivation in Bajra growing tracts of the country.

<table>
<tr><th>1</th><th>2</th><th>3</th><th>4</th></tr>
<tr><td>19.</td><td>Sorghum</td><td>CSV-10 (SPV-346)</td><td>Recommended for release for cultivation in all the Kharif Sorghum growing tracts. However, its grain yield is exceptionally reported to be high in Maharashtra, Karnataka and Andhra Pradesh.</td></tr>
<tr><td>20.</td><td>Sorghum</td><td>CSV-11 (SPV-351)</td><td>Recommended for release for cultivation in all the Kharif sorghum growing tracts.</td></tr>
<tr><td>21.</td><td>Sorghum (Forage)</td><td>Rajasthan Chari-1 (SU-52)</td><td>Recommended for release for cultivation in all the forage sorghum growing tracts in the country.</td></tr>
<tr><td>22.</td><td>Sorghum (Forage)</td><td>Pusa Chari-9 (PC-9)</td><td>Recommended for release for cultivation in all over India in the sorghum growing States for <i>one cut</i> and Gujarat State for <i>two cuts.</i></td></tr>
<tr><td>23.</td><td>Sorghum (Forage)</td><td>Pusa Chari-23 (PC-23)</td><td>Recommended for release for cultivation in all over India in the Sorghum growing region for two or more cuts with specific adoptation in Gujarat State.</td></tr>
<tr><td>24.</td><td>Sorghum</td><td>UP Chari-2</td><td>Recommended for release for cultivation in all over India except very high rainfall areas.</td></tr>
<tr><td>25.</td><td>Barley</td><td>BH-75</td><td>Recommended for release for cultivation under timely sown semi irrigated conditions of North Western plain zone.</td></tr>
<tr><td>26.</td><td>Wheat</td><td>WH-283</td><td>Recommended for release for cultivation under high fertility, normal sown and irrigated areas of Haryana and parts of Rajasthan and Gujarat (NWPZ).</td></tr>
<tr><td>27.</td><td>Paddy</td><td>Manasarovar (IET-6314)
(RP-1045-23-2-1)</td><td>Recommended for release for cultivation in the following regions :
<table>
<tr><th><i>State</i></th><th><i>Districts</i></th><th><i>Season</i></th></tr>
<tr><td>Andhra Pradesh</td><td>Parts of East & West Godavari</td><td><i>Kharif</i></td></tr>
<tr><td>Tamil Nadu</td><td>Thanjavur, Trichy, Periyar, Madurai</td><td><i>Sambah and Thaladi</i></td></tr>
<tr><td>West Bengal</td><td>Midnapur East & West Hooghly 24 Parganas</td><td><i>'Aman'</i> or <i>Kharif</i></td></tr>
</table></td></tr>
<tr><td>28.</td><td>Brinjal</td><td>Pant Samrat (PBR 129-5)</td><td>Recommended for release for cultivation in entire country.</td></tr>
<tr><td>29.</td><td>Cauliflower</td><td>Pant Subhra (114-S)</td><td>Recommended for release for cultivation in Northern part of the country.</td></tr>
<tr><td>30.</td><td>Cotton</td><td>Supriya (CP-1998F)</td><td>Recommended for release for cultivation in irrigated and rainfed areas including the rice fallows of the Southern districts of Tamil Nadu, Andhra Pradesh and the Union Territory of Pondicherry.</td></tr>
<tr><td>31.</td><td>Groundnut</td><td>Kaushal (G-201)</td><td>Recommended for release for cultivation in all the groundnut growing States of the country.</td></tr>
<tr><td>32.</td><td>Cassava</td><td>Sree Sahya (H-2304)</td><td>Recommended for release for cultivation in Andhra Pradesh, Tamilnadu, Karnataka, Maharashtra, Assam, North Eastern region and Kerala.</td></tr>
<tr><td>33.</td><td>Cassava</td><td>Sree Visakham (H-1687)</td><td>Recommended for release for cultivation in Andhra Pradesh, Tamilnadu, Karnataka, Maharashtra, Assam, North Eastern region and Kerala.</td></tr>
<tr><td>34.</td><td>Maize</td><td>Diara-3 (ZFS-3)</td><td>Recommended for release for cultivation in all parts of the country where very early maturing varieties are grown.</td></tr>
<tr><td>35.</td><td>Maize</td><td>D-765</td><td>Recommended for release for cultivation in all part of the country where very early maturing varieties are grown.</td></tr>
<tr><td>36.</td><td>Foxtail (Millets)</td><td>Nallamala Korra (Nandyal/ Korra-2) (Sia-326)</td><td>Recommended for release for cultivation in all the foxtail Millets growing areas of the country.</td></tr>
</table>

1	2	3	4
37.	**Sugarcane**	Sanjivini (CO. 7219)	Recommended for release for cultivation in all seasons throughout Maharashtra, irrespective of soil types and climatic regions. The variety is not recommended for Notification, because Sugarcane crop is not covered at present under the Seeds Act.
38.	**Sugarcane**	B.O. 91	Recommended for release for cultivation in all sugarcane tracts of Bihar, East Uttar Pradesh specially waterlogged and low input areas. The variety is not recommended for Notification because sugarcane crop is not covered at present under the Seeds Act.
39.	Bidi Tobacco	Anand-2	Recommended for release for cultivation in Bidi Tobacco growing areas of Gujarat, Karnataka, Maharashtra and Andhra Pradesh. The variety is not recommended for notification because Bidi Tobacco seeds are not covered at present under the Seeds Act.
40.	Bidi Tobacco	Anand-119	Recommended for release for cultivation in Bidi Tobacco growing areas of Gujarat, Karnataka, Maharashtra and Andhra Pradesh. The variety is not recommended for notification because seeds of Bidi Tobacco are not covered at present under the Seeds Act.

The detail of the important features of the above varieties are given in Annexure II.

Detail of the varieties wherein sponsoring authorities have been advised to re-submit the proposal with additional information as indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Moth-bean	Maru Moth-1	More data required to be generated for correct evaluation of the variety. The proposal might be resubmitted alongwith data generated in the State alongwith recommendations of the State Release Committee. Please also submit the recommendation of the State Seed sub-committee.
2.	Clusterbean	Maru Guar (2470/12)	Results of the trials conducted under All India Coordinated projects and reaction of the farmers for the variety might be indicated. After receipt of the above data the Chairman of the Committee has been authorised to decide the release of the varieties.
3.	Wheat	WH-291	(i) Variety is reported to be segregating for pubescent character of the glume. Presently it is claimed that glumes are glabrous and the comparison between the pubescent and glabrous genotypes vis-a-vis other characters of the cultivar is imperative. (ii) The seeds of the cultivar are reporteds to be shy in germination potential thoughs germination never have been a problem ins case of wheat. (iii) The sponsoring authority might re-submit the proposal alongwith detailed information on above issues.
4.	Arhar (Red gram)	TAT-5	The variety might be tested for one more year and the proposal might be re-submitted alongwtih additional data generated.
5.	Bajra	HHB-45	(i) The recommendations of the Workshop alongwith data generated in Project Coordinated trials might be indicated. (ii) After receipt of the above data the proposal would be evaluated for its release.

Details of the Varieties which are not recommended for release

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Cowpea	Shreshtha (V-37)	Both the varieties are found having common parentage and do not show any superiority over Amba (V-16) variety.
2.	Cowpea	Swarna (V-38)	
3.	Groundnut	TG-3	(i) The data do not indicated the superiority of the variety in respect of yield potential over the existing varieties of same group. (ii) The variety is also reported not popular with farmers.

Item No. 2: Consideration of the proposals for notification under Section 5 of the Seeds Act.

107 proposals of various of different crops were evaluated for Notification. The observations of the Central Sub-committee on Crop Standard, Notification and Release of Varieties on each proposal is enumerated as under :

Detail of the Varieties recommended for Notification under Section 5 of the Seeds Act.

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	GW-2	Recommended for Notification.
2.	Wheat	KDW-16 (Keerthi)	—Do.—
3.	Wheat	KDW-137 (Kiran)	—Do.—
4.	Paddy	Janki	Recommended for Notification. Though the variety has not been tested under AICRIP but still recommended for notification because the trials for dee water paddy have been recently started under AIC RIP.
5.	Paddy	*Sathy*-34-36	Recommended for Notification.
6.	Paddy	Pratap (OR-131-3-1)	—Do.—
7.	Paddy	Daya (OR-131-13-13)	—Do.—
8.	Paddy	Utkal Prava (CR-1030)	—Do.—
9.	Paddy	Suphala (OR-45-21-63)	—Do.—
10.	Paddy	Parijat (IET-2684) (OR 34-16)	Do.
11.	Paddy	Keshari 6215 (OR 63-252)	—Do.—
12.	Paddy	Jajati (OR 47-2) (IET-7284)	—Do.—
13.	Paddy	MTU-7029	—Do.—
14.	Paddy	MTU-6024	—Do.—
15.	Paddy	IET-1722	—Do.—
16.	Paddy	Sugandha	—Do.—
17.	Sorghum	Gujarat Sorghum-35	—Do.—
18.	Sorghum	Gujarat Sorghum Hybrid-1	—Do.—
19.	Sorghum	S.B. 1066	—Do.—
20.	Maize	Composite Suwan	—Do.—
21.	Barley	Kadar DL-36	—Do.—
22.	Ragi (Finger Millets)	Nilachal (B 4-10-56)	—Do.—
23.	Ragi (Finger Millets)	Simhadri	—Do.—
24.	Nagli (Finger Millets)	Gujarat Nagli-1	—Do.—
25.	Kodara (Kodomillet)	Gujarat Kodara-1	—Do.—
26.	Vari	Gujarat Vari-1	—Do.—
27.	Cotton	Lohit	Recommended for Notification. Though the variety has officially released in 1983 by State Seed Sub-committee but it is in cultivation since 1969 and hence recommended for Notification.

1	2	3	4
28.	Cotton	NA-247 (G. Hirsutum)	Recommended for Notification.
29.	Cotton	DB-3-12-(Ajanta)	—Do.—
30.	Groundnut	Gujarat Groundnut-2 (J-1/27-5-1)	—Do.—
31.	Gingelly (Sesamum)	Kalika (BM-3-7)	—Do.—
32.	Gingelly (Sesamum)	TMV-4	—Do.—
33.	Green gram	Jyoti (Hybrid 4-3)	—Do.—
34.	Green gram	Sujata (Hy. 12-4)	—Do.—
35.	Green gram	Dahuli (TT 9E)	—Do.—
36.	Gram	ICCC-4	—Do.—
37.	Cowpea	Gujarat Cowpea-2	—Do.—
38.	Black gram	Sarala (B 12-4)	—Do.—
39.	Arhar (Red gram)	Tur T-15-15	—Do.—
40.	Brinjal (Long)	Azad Kranti	—Do.—
41.	Brinjal (Round)	Azad B 1 Round	—Do.—
42.	French bean	Pant Anupama (UPF-191)	—Do.—
43.	Table Pea (Peas)	Azad P-1	—Do.—
44.	Chilli	Chanchal	—Do.—
45.	Paddy	BG-90-2	Recommended for Notification. The same variety has also been released in the State of Uttar Pradesh and Bihar as Pant Dhan-4 and Sujata. The Committee recommended that this variety would be notified as BG-90-2 under the name it was tested.
46.	Paddy	Radha	Recommended for Notification.
47.	Paddy	BR-34	—Do.—
48.	Paddy	Culture-1 (CR -237-1) (Kalinga-III)	—Do.—
49.	Bajra	Giant Bajra	—Do.—
50.	Cotton	NHH-44	—Do.—
51.	Cotton	Rohini (NA-48)	—Do.—
52.	Niger	IGP-76	—Do.—
53.	Wal (Dolichos Lab-lab in) . .	Wal Konkan-1	—Do.—
54.	Cotton	Karungani-9 (K-9)	—Do.—

The detail of the important features of the above varieties are given in Annexure III.

Detail of the Varieties wherein sponsoring authorities have been advised to re-submit the proposal alongwith information indicated against each Variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	Utkalika (OW-801-3)	(i) The proposal might be reput up alongwith data of All India Coordinated Project. (ii) The projecte Coordinator might be requested to indicat his opinion based on the performance of the variety in Coordinated trials.
2.	Wheat	Sagarika (OW-6)	—Do.—
3.	Paddy	Sarthi	—Do.—
4.	Paddy	Shankar (OR-16-586-12)	—Do.—
5.	Paddy	Rudra (OR-165-97-15)	—Do.—
6.	Paddy	Vijay Mahsuri (MTU-4407)	—Do.—
7.	Paddy	Kottabayyahunda (AKP 70-73)	—Do.—

1	2	3	4
8.	Paddy	Pavisham (MO-6)	(i) The proposal might be reput up along with data of All India Coordinated project. (ii) The Project Coordinator might be requested to indicate his opinion based on the performance of the variety in coordinated trials.
9.	Paddy	Dhanya Lakshmi (BPT-1235)	—Do.—
10.	Paddy	Sona Mahsuri (BPT)-(3291)	—Do.—
11.	Paddy	Badava Mahsuri (PLA-1100)	—Do.—
12.	Paddy	Pusa-33	—Do.—
13.	Paddy	CR 138-928	—Do.—
14.	Paddy	SLR-51214	—Do.—
15.	Korra (Italian Millet)	Chitra	—Do.—
16.	Cotton	NH-80 (Hybrid)	—Do.—
17.	Groundnut	Jawan (OG-71-3)	—Do.—
18.	Soyabean	VL Soya-1	—Do.—
19.	Green gram	Ratila Selection	—Do.—
20.	Gram	Avarodhi	—Do.—
21.	Cowpea Pulses	Krishnamani (PTB-2)	—Do.—
22.	Tomato	Azad T-2	—Do.—
23.	Beans	Rajni	—Do.—
24.	Bitter gaurd	V.K.I. Priya	—Do.—
25.	Bhindi (Okra)	Gujarat Bhindi-1	—Do—
26.	Paddy	Panvel-1	—Do.—
27.	Paddy	IGP 1-37 (Darna)	—Do.—
28.	Paddy	Prabhavati (PNB-1)	—Do.—
29.	Paddy	SKL-6 (Sakoli-6)	—Do.—
30.	Paddy	SYE-75 (Sindewahi-75	—Do.—
31.	Bajra (Cumbu)	X. 5 (UCH-9)	—Do.—
32.	Cotton	NH-239 (Purnima)	—Do.—
33.	Urid (Black gram)	TAU-1540	—Do.—
34.	Red Gram	TAT-10 (Trombay Akola Tur-10)	—Do.—
35.	Castor	VI-9	—Do.—

Details of the Varieties rejected for Notification

Sl. No.	Crop	Variety	Remarks
1.	Paddy	Sowbhagya (MTU-4569)	(i) Variety is reported susceptible to various disease and pests. (ii) The area under cultivation of this variety has gone down considerably.
2.	Peas	Madhu-1	The variety is susceptible to powdery mildew.

ANNEXURE I

List of the participants who have attended the First Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 25th and 26th September, 1984 Under the Chairmanship of Dy. Director General (CS) ICAR, in Conference Hall of NBPGR, Pusa, New Delhi-110 012

1.	Dr. M.V. Rao Dy. Director General (CS) Indian Council of Agril. Research Krishi Bhavan, New Delhi.	*Chairman*
2.	Dr. P.K. Agrawal, Head, Divn. of Seed Sciences and Tech. Indian Agril. Research Institute Pusa, New Delhi-110 012.	*Member*
3.	Shri B.N. Sehgal, Chief Seed Certification Officer Delhi Administration, Delhi.	*Member*
4.	Shri H.L. Trivedi Director, Gujarat State Seed Certification Agency Ahmedabad (Gujarat)	*Member*
5.	Shri Hari Krishna Director, U.P. State Seed Certification Agency Lucknow (UP)	*Member*
6.	Shri G.S. Sandhu, Seed Director, Punjab State Certification Authority, Chandigarh.	*Member*
7.	Shri B.T.P. Yadava Project Director (Oilseed Research) Hyderabad.	*Member*
8.	Dr. S. Chandra Project Director (Pulses) Kanpur. (U.P.)	*Member*
9.	Shri N. Pattanayak Director, Orissa State Seed Certification Agency Bhubaneswar.	*Member*
10.	Shri J.N. Johri Director, Rajasthan State Seed Certification Agency, Jaipur.	*Member*
11.	Shri B.P. Sikder Director (Inputs) Ministry of Agriculture New Delhi.	*Member-Secretary*

Others

12. Dr. N.P. Nema
Chief - RD & QC
National Seeds Corporation Ltd.,
Beej Bhavan, Pusa, New Delhi-12.

13. Shri P.C. Phookan,
Joint Director of Agriculture
Assam, Gauhati.

14. Shri V.V.S. Murty,
Senior Rice Breeder
Directorate of Rice Research
Hyderabad-30 (A.P.)

15. Shri B.B. Buch,
Addl. Director of Agriculture.
Gujarat State, Ahmedabad.

16. Shri B.S. Verma
Chief Seed Certification Officer (Hqrs.)
Haryana State Seed Certification Agency
Chandigarh.

17. Shri K.K. Rewari
Dy. Director of Agriculture (Hqr.)
Directorate of Agriculture
Haryana, Chandigarh.

18. Shri V. Subramaniam
Joint Director of Agriculture (SSF)
Madras.

19. Shri Ashok Chauhan
Asstt. Agronomist
Representing Director of Agriculture
Rajasthan, Jaipur

20. Shri N.S. Tunwar,
Officer on Special Duty (QC&T)
Ministry of Agriculture
New Delhi.

21. Shri R. S.Chhonkar,
Technical Assistant (Seed)
Ministry of Agriculture
New Delhi.

ANNEXURE II

The important features of the varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its First Meeting held on 25th and 26th Sep. 1984

1. Name of the crop : *Cowpea* or *Lobia*

Name of the variety : Amba (V-16)

Parentage with details of its pedigree :

Parentage : V-16 was developed from a mutation programme. The seeds of the white-seeded variety, Pusa Phalguni were treated with the chemical mutagen di-methyl sulphate (DMS: 0.8%—2h). As a result, in the M_2 generation, a brown-seeded mutant was isolated, which in subsequent generations showed genetic instability. The mutant (No. 1) gave increasingly more variability in succeeding generations. Ultimately, it was established to be a case of an induced mutator system.

Description of Variety :

The major characteristics of the cowpea variety V 16 are summarized as under :

(a) Plant height : 62.25 cm.

(b) Distinguishing morphological characters :

(i) Growth Habit : It is a non-trailing variety with medium height. The plants generally grow upright.

(ii) Leaf characters : The foilage of variety of V 16 is deep green, leaves are trifioliate with the leaflets medium and cordate.

(iii) Flower Characters : Light violet standard with whitish wings and keel.

(iv) Pod Characters : Mature pods deep green on full maturity 11 cm long with 8-9 seeds/pod. The dry pods have white colour with faint reddish tinge.

(v) Seed Characters : Deep red, glossy, roundish, medium large; 1000-grain weight 99.0 g.

(c) Maturity (range in number of days) : Flowering 45-48 days, first flush of green pods 55-60 days, first flush of mature pods 70-75 days, and complete harvesting 90-95 days.

(d) *Reaction to major diseases in the field and under controlled conditions* : It has shown resistance against bacterial blight *Macrophomina* blight, powdery mildew, root rot and anthracnose.

(e) Reaction to major pest in the field : Susceptibility to pod borer almost comparable to the standard check C 152, but it gives higher yield even without any insecticidal application.

(f) Agronomic Features;

(i) Resistance to lodging : The variety V 16 has almost complete resistance to lodging, since it is an erect and nontrailing variety with a strong main stem. Lodging has never been observed in the field.

Agency responsible for maintaining Breeder seed : Head of the Division of Genetics, IARI, New Delhi.

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2. Name of crop : *Green gram*

Name of variety : *S-9*

Sponsored by : Dryland Agriculture Research Project, Haryana Agricultural University Hissar.

Parentage with details of its Pedigree : Selection from the crops BR-2 x Type 2.

Description of variety/plant height—Distinguishing morphological characters—Maturity (range in number of days seeding/trnasplanting to flowering seed to seed :

(i) Maturity (Little moisture stress) : 70-75
(Medium/severe moisture stress) : 60-65
(ii) Pods/plant : 36
(iii) Seeds/pod : 10
(iv) Seed Colour : Shining green
(v) 100 seed weight (g) : 3.8
(vi) Growth habit : Medium tall
(vii) Plant height (cm) : 46

Agency responsible for maintaining breeder's stock : Dryland Agriculture Research Project.

3. Name of crop : *Green gram* (Moong)
Name of the variety : *K-851*
Sponsored by : Deparment of Plant Breeding, H.A.U., Hissar.
Parecentage with details of its pedigree Introduction in Haryana.

Description of Variety/hybrid :
Days to maturity Kharif
Summer : 75
Number of pods/plant : 60-65
Seed per pod : 50
12·0
Seed colour : Shining green
100/seed weight (g) : 4.2
Growth habit : Medium tall
Plant height (cm) : 62.5

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4. Name of crop : *Green gram* (Moong)
Name of variety : *Pant Moong—2*
Sponsored by : G.B. Pant Univ. of Agri. & Tech., Pantnagar.
Parentage with details of its pedigree The variety has been developed from ML-26 variety. The seed was irradiated in 1976 at 10 KR doses of gamma rays (60 co-source). The M^2 and M_3 generations were handled as pedigree method of breeding.

Description of the Variety :
(i) Maturity : About 80 percent pods mature at a time. It matures in 65 to 70 days in Kharif and 60-65 days in Zaid.
(ii) Plant height (cm) : 70-80 cm Kharif
35-45 cm Zaid
(iii) Plant habit : Semi-erect
(iv) Stem : Green, sparsely haired
(v) Leaves : Ovate, green some of the leaves on plants are penta-foliate and tetrafoliate.
(vi) Flower colour : Yellow
(vii) Immature pods : Green, sparsely haired.
(viii) Mature pods : Brownish black (10-11 seeds/pod), sparsely haired pods alignment almost horizontal.
(ix) Seed colour : Shining green
(x) Seed size : 3 g/100 seeds (Kharif) and 3.5 to 4.0 g/100 seeds (Zaid)
(xi) Resistance to MYMV : Moderately resistant
(xii) Distinguishing morphological characters : (i) Some of the leaves are tetra and penta-foliate.
(ii) Pods alignment is almost horizontal.
Agency responsible for breeder's seed. : G.B.P.U.A. & T., Pantnagar

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5. Name of crop : *Gram*
Name of variety : *Gaurav (H-75-35)*
Sponsored by : Deptt. of Plant Breeding, HAU, Hissar.
Parentage with details of its Pedigree : C 235 x E100Y

Description of Variety/hybrid :
Days to 50% flowering : 80-90
Days to maturity : 160-165
Plant height (cm.) : 60-65
Primary branches : 3.10
Pods/plant : 84
Seed/pod : 1.40
100-seed weight (g) : 20.60
Yield/plant (g) : 24.50
Protein (%) range : 17.5—23.2
Mean : 20.4
Distinguishing features : Vigorous seedlings, leaves darkgreen and broader in size. Erect plant with pigmentation in leaf axiles. Flowers small and deep pink. Pods bigger than normal. Seeds darkbrown and bold in size.
Agency responsible for maintaining breeder's stock : Deptt. of Plant Breeding, HAU, Hissar.

6. Name of crop : *Gram*
Name of variety : *GNG-146*
Parentage : A selection from IARI material.
Sponsored by : Dr. R.V. Maheshwari, Plant Breeder, Agricultural Research Station, Sriganganagar (Rajasthan)

Description of Variety:

(i) Plant height : Average 57 cm, range 55 to 75 cm.
(ii) Average number of primary branches : 7.1
(iii) Average number of secondary branches : 25.6
(iv) Av. number of pods : 157.4
(v) 100 seed weight : 13.4 gms.
(vi) Distinguishing morphological characters : GNG 146 is a purple flowered, semi-erect variety having dull green canopy with medium sized leaves. Seed coloat is greyish yellow in colour. Stem bears distinct purple pigmentation on lower part of primary branches.
(vii) Maturity : 145 to 150 days, average 152 days.
(viii) Reaction to major pests : Equally tolerant to pod borer as other existing varieties.
(ix) Reaction to major diseases : Field resistance to Ascochyta blight wilt and yellowing of leaves.
(x) Agronomical Features : Field tolerance to lodging shattering and drought. Performs equally good in rainfed and in irrigated conditions.

Agency responsible for maintaining breeders seed : Agricultural Research Station, Sriganganagar (Rajasthan).

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7. Name of crop : *Gram*
Name of variety : *Pusa*-240 (*BG-240*)
Sponsored by : Head, Division of Genetics, IARI, New Delhi-110 012.
Parentage with details of its pedigree : The variety has been evolved from a straight cross-involving two ***Desi.*** types viz. H-208 and P.-556. The pedigree method of selection was used for handling this cross in the early segregating generations.

Descriptions of Variety :

(a) Plant height : Ranges from 33-54 cm depending upon the location and ecological conditions.
(b) Distinguishing morphological characters : This variety is semi-spreading in growth habit with angular stem. Leaflets are small, ovate, with purplish green rachis which is rather prominent in this variety. Stem surface is hairy.
(c) Maturity (range in number of days) seedling/transplanting to flowering/seed to seed : This variety takes 135 to 150 days from seed to seed.

Agency responsible for maintaining breeder's stock : The Division of Genetics, IARI, New Delhi.

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8. Name of the crop : *Mothbean*
Name of the variety : *Jawala* (PCMO-926) (UUM-1007)
Sponsored by : Moth Breeding Project, Department of Genetics & Plant Breeding, S.K.N College of Agriculture, Sukhadia University, Jobner-303 320.
Parentage with the details of its Pedigree : In the year 1977 some 300 plants from the bulk plot of UUM-1007 (source—Raniser, Bikaner) which were relatively healthy. Evaluation of these single Plant progenies in 1978, revealed that three of these progenies were free from Yellow Mosaic Virus (YMV) and were similar in their morphological features. The seeds of the three progenies formed the base breeding material of this variety Jawala.

Descriptions of the variety :

(a) Plant Height : Average height of 40.78 cms with a range of 20.5—46.95 cms.
(b) Distinguishing morphological characters : It bears uniform broad leaves with shallow incisions. The peduncle are short (0.5-2.0 cm) with axillary positions. The pods/cluster are more and the plant is of semi-spreading type. The pod clusters are mostly borne on primary branches, remain below the leaves facing soil surface. The colour of the pods is brown. Growth habit is semi-determinate type.
(c) Maturity (range of number of days) : :
(i) Seedling to flowering : 42 days (42-66).
(ii) Seed to seed, days maturity : 90 (85 to 102). Average days required for maturity of the crop from sowing is 90 days with a range of (85-102 days).

Agency responsible for maintaining breeder's stock : Department of Genetics and Plant Breeding, S.K.N. College of Agriculture, Jobner.

9. Name of the crop *Pigeon pea, Red gram* (Tur/Arhar)
Name of variety : *TT.* 6 (*T. Vishakha*-1) (*Trombay* Vishakha-1)
Sponsored by : Biology and Agriculture Division, Bhabha Atomic Research Centre, Trombay, Bombay-400 085.
Parentage with details of its pedigree : Fast neutron induced large seeded mutant of T. 21.
Description of variety hybrid : (i) Plant height : 126-252 cm.
(ii) Days to 50% flowering : 90-104
(iii) Maturity : 85 to 160 days.
(iv) 100 seeds weight (g) : 9.3 to 11.4
Distinguishing morphological characters : Slightly compact and erect growth habit, pods are long and broad. Seeds are red and medium large.
Agency responsible for maintaining breeder's stock : (i) Biology & Agriculture Division, Bhabha Atomic Research Centre, Bombay-400 085.
(ii) Punjabrao Krishi Vidyapeeth, Akola

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10. Name of the crop : *Linseed*
Name of the variety : *Himalini*
Sponsored by : (i) Plant Breeder (Oilseeds), H.P. Krishi Vishva Vidyalaya, Palampur-176 062.
(ii) Project Coordinator (Linseed), CSAUA & T, Kanpur.
Parentage with details of its pedigree : Himalini is a derivative from a cross between renowned linseed variety K_2 and Kangra local, developed through pedigree method of breeding.
Description of variety :
a) Plant height : 60-70 cm.
b) Distinguishing morphological characters : (i) Erect growth habit with compact recemes of medium size capsules.
(ii) Flower colour : White
c) Maturity (range in number of days) : 150-175 days.
(d) Reaction to major diseases under field conditions : (i) Resistant to linseed rust
(ii) Resistant to wilt
(iii) Susceptible to powdery mildew.
(e) Agronomic features (e.g. resistance to lodging, frost and shattering, fertiliser responsiveness, suitability for early or late-Sown conditons, seed rate etc. (i) Being erect in growth habit and medium tall in plant height the variety is resistant to lodging.
(ii) It stands frost very well and is resistant to shattering.
(iii) It responds well to fertilisers.
(iv) It is suitable for cultivation under Uttera conditions as well as in prepared seed bed
(v) Seed rate : 30 Kg/ha.
(f) Quality of produce (of grain forage/fibre including nutritive value where relevant) : (i) Oil content : 40-42%
(ii) Iodine value : 164
(iii) Stalks also produce fibre of good quality.
Agency responsible for maintaining breeder's stocks : Department of Plant Breeding, H.P. Krishi Vishva Vidyalaya, Palampur.

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11. Name of the crop : *Linseed*
Name of the variety : *Pusa*-2 (L.S. 2)
Sponsored by : Indian Agricultural Research Institute, Regional Station, Kalyanpur, Kanpur-24.
Parentage and breeding method used : Developed through selections from B.S. 12. (B.S.=Bulk Selection)
Description of the variety :
(i) Plant habit : Erect and compact
(ii) Plant height : 50-60 cm.
(iii) Colour of the stem & foliage : Green with dark green broad leaves.
(iv) Days to 50% flowering : 45 days.
(v) Days to complete maturity : 130 days
(vi) Colour of corolla : White with conspicuous flowers.
(vii) Capsule characters : (a) Unripe capsule colour : Green
(b) Ripe capsule colour : Brown
(c) Size of capsules : Bold
(d) No. of seeds/capsule : 8-10
(viii) Seed characters : (a) Colour of seed : Brown, lustrous
(b) 1000 seed weight : 8-9 g.
(c) Oil content : 45 per cent

(ix) Resistance to drought : Tolerant
(x) Resistance to shattering : Resistant
(xi) Resistance to diseases : Resistant to linseed rust and tolerant to wilt and powdery mildew.
(xii) Resistance to pests : Tolerant to budfly (*Desineura lini*)

Agency responsible for maintaining breeder's stocks : IARI, Regional Research Station, Kalyanpur, Kanpur.

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12. Name of the crop : *Linseed* .
Name of the variety : *Pusa*-3 (LS. 3)
Sponsored by : Indian Agricultural Research Institute, Regional Station, Kalyanpur Kanpur.
Parentage and breeding method used : Developed through pedigree method of breeding from cross K 2 x T. 603.

Description of the variety :
(i) Plant habit : Erect and Compact
(ii) Plant height : 60-70 cm
(iii) Colour of stem and foilage : Green with dark green leaves.
(iv) Days to 50% flowering : 45 days.
(v) Days to complete maturity : 130 days
(vi) Colour of corolla : White
(vii) Capsule character :
  (a) Unripe capsule colour : Green
  (b) Ripe capsule colour : Brown
  (c) Size of capsule : Bold
  (d) No. of seeds/capsule : 8-10
(viii) Seed character :
  (a) Colour of seed : Brown
  (b) 1000 seed weight : 9-10 g.
  (c) Oil content : 45%
(ix) Resistance to drought : Tolerant
(x) Resistance to shattering : Resistant
(xi) Resistant to diseases : Resistant to rust and tolerant to wilt and powdery mildew.
(xii) Resistance to pest : Tolerant to budfly (*Desineura lini*)

Agency responsible for maintaining breeder's stock : IARI, Regional Station, Kalyanpur, Kanpur.

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13. Name of crop : *Indian mustard* (*Raya*)
Name of the variety : *RH*-30
Sponsored by : Project Leader & Head, Oilseeds Section, Deptt. of Plant Breeding, Haryana. Agricultural Research, Hissar.
Parentage with details of its pedigree : Variety RH-30 is a single plant selection from strain P. 26/3-1.

Description of variety/hybrid

S. No. (1)	Characters (2)	Late sown conditions (3)	Normal sown conditions (4)
(i)	Plant height (cm)	165	185
(ii)	1st flowering (days)	50	40
(iii)	Maturity (Days)	131	140
(iv)	Primary branches (no)	5	5
(v)	Siliqua on main sheet (NO)	31	33
(vi)	Siliqua length (cm)	4.0	4.2
(vii)	Seeds/siliqua (NO)	12	14
(viii)	1000 seeds weight (gms.)	5.6	5.6
(ix)	Yield (Kg/ha)	1676	1665

Agency responsible for maintaining breeder's stock : Deptt. of Plant Breeding, Haryana Agricultural University, Hissar.

14. Name of the crop : *Mustard, Rai, Raya or Laha*

Name of the variety : *Pusa Bold* (*DIR*-50)

Sponsored by : Head, Division of Genetics, IARI, New Delhi-110 012.

Parentage with details of its pedigree : Pusa Bold was selected from a cross involving an early variety 'Varuna and a late maturing bold seeded variety B.I.C.-1780' of mustard.

Description of Variety :

(a) Plant height : 140-150 cm.

(b) Distinguishing morphological characters : This variety is medium in height and has semi-compact branching.

(i) Growth habit : The plant type of Pusa Bold is erect with semi compact growth habit. Plants bend at maturity due to heavily laiden pods.

(ii) Leaf character : Medium in size, medium green in colour with varying number of lobes and acute terminal lobe.

(iii) Flower : Cruciferous flower with yellow petals.

(iv) Pods : Unripe pods—green; ripe pods—golden brown straw; 5-7 cm in length with 13-18 seeds/pod.

(v) Seed : Blackish brown; round; bold (5-7 g/1000 seeds).

(c) Maturity (range in days) : It matures in 110 to 145 days. In early maturing regions where winter spell, is very short it matures in 110 to 115 days. While in late maturing regions it takes 135 to 145 days.

Agency responsible for maintaining breeder's seed : Division of Genetics, IARI, New Delhi.

15. Name of the crop : *Soyabean*

Name of variety : *PK*-308

Sponsored by : GBPUA & T, Pantnagar.

Parentage : T-31 × Hardee

Description of Variety :

(a) Distinguishing morphological characters : Narrow leaf grey, pubescence (none of the released varieties has this characteristic phenotype), white flower.

(b) Plant height : 50-65 cm.

(c) Maturity : 110 days

(d) Reaction to major diseases : Moderately resistant to yellow mosaic (small non-spreading yellow spots) resistant to bacterial pustules and alternaria leaf spots.

(e) Reaction to insects : Similar to Bragg.

(f) Agronomic features : Good germination, resistant to shattering, specifically suitable for intercropping with maize due to *narrow leaf*, 100 seed weight about 12 g. 75 kg seed/ha, 45 cm spacing.

(g) Quality of produce : Attractive yellow colour medium size seeds with 20.23% oil and 40.32% protein.

Agency responsible for breeder seed : GBPUA & T, Pantnagar.

16. Name of the crop : *Soyabean*

Name of variety : *MACS*-13

Sponsored by : Maharashtra Association for the Cultivation of Science, Research Institute Law College Road, Poona-411 004.

Parentage with details of its pedigree : It is an intra-specific cross of Hampton × EC. 7034 and selections made by pedigree method.

Description of the Variety :

(a) Distinguishing morphological characters :

- (i) Marked with purple pigmentation at the hypocotyl region at seedling stage.
- (ii) Plants are determinate with semi-dwarf growth habit.
- (iii) Leaves are oblong in shape.
- (iv) Duration from sowing to 50% flowering is 40 to 45 days.
- (v) Flowers are purple in colour.
- (vi) Stem and pods are covered with dense pubescence which is brown at maturity.
- (vii) Seeds are round, shining and with black hilum and medium to bold in size (100 seed weight is 11 to 15 gm. with cream coloured seed coat).

(b) Plant height : Plants are semi-dwarf with determinate erect growth habit, (with average growth height of 40 cm).

(c) Maturity : 90 to 100 days.

(d) Reaction to major diseases : Under field conditions, no incidence of diseases has been observed.

(e) Reaction to major pests : No incidence of pests attack was observed.

(f) *Agronomic features :*

(i) Reaction to lodging : It is resistant to lodging.
(ii) Resistance to shattering : It is non-shattering variety.
(iii) Response to fertilizer application : Optimum yields are obtained with the following doses :

(1) N=20 kg/ha (2) P_2O_5=80 kg/ha

(iv) Seed rate : 80 to 100 kg. per hectare (according to seed size)
(v) Plant population : 0.4 million plants per hectare.
(vi) Row distance : 30 or 45 cm.
(vii) Sowing time : Last week of June to 3rd week of July.

(g) *Quality* :

(i) Protein content : 38 to 45%
(ii) Oil content : 15 to 22%

Agency responsible for maintaining the breeder's stock : Director, Maharashtra Association for the Cultivation of Science, Law College Road, Pune-411 004.

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17. Name of the crop : *Bajra*
Name of variety : *HC*-4 (*MP*-19)
Sponsored by : Haryana Agricultural University, Hissar-125 004.
Parentage with details of its pedigree : Developed as a result of intermating seven inbred lines.

Description of variety Hybrid :

(i) Plant height : 240-270 cm.
(ii) Distinguishing morphological characters : Tall, medium thick stem, medium broad leaves, above medium seed size.
(iii) Maturity (range in number of days seeding to flowering, seed to seed) : Seeding to flowering 50-55 days and seed to seed 82-86 days.
(iv) Reaction to major disease (in field and under controlled conditions):—

Field condition	*Sick Plot*
DM: Resistant	Resistant
Smut: Less susceptible	Less susceptible
Ergot : —do—	—do—

(v) Reaction of major pests (in field conditions and in controlled conditions including pests of storage. : Multiple resistance against stem borer, jessids and leaf rollers.
(vi) Agronomic features (e.g. resistance to lodging: drought frost and shattering, fertilisers responsiveness, suitability for early or late sown conditions seed rate etc. : Fertilizer responsive, suitable for both, early and late sown condition.

Agency responsible for maintaining breeder's stock : Haryana Agricultural University, Hissar.

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18. Name of the crop : *Bajra*
Name of variety : *MBH*-118
Sponsored by : The Project Coordinator (Millets), College of Agriculture. Pune-411 025.
Parentage and Breeding method used : Mahyco M.S.-2 × Pollinator No. 3.

Description of Variety :

(i) Plant height : 175 to 200 cms.
(ii) Days to flowering : 47 to 50 days
(iii) Days to maturity : 78 to 83 days
(iv) No. of Tillers : 3 to 5
(v) Leaf : Broad - light green leaves.
(vi) Lodging : 15 to 20%
(vii) Earhead length : 30 to 35 cms.
(viii) Earhead girth : 10 to 12 cms.
(ix) Earhead shape : Conical

(x) Presence of Bristles : Yes
(xi) Weight of 1000 grain : 9 to 11 gms.
(xii) Grain colour & size : Bold grain with shining slight colour
(xiii) Pollen sheeding : Good
(xiv) Grain yield per Ha : 18 to 24 qtls.
(xv) Fodder yield per Ha. : 7 to 8 tons.

Description of parents :

Particulars		*Female*	*Male*
		Mahyco Male sterile No. 2	Pollinator No. 3
(i) Plant height	:	180 to 185 cms.	170 to 180 cms.
(ii) Days to flowering	:	45 to 50 days	52 to 58 days.
(iii) Days to Maturity	:	75 to 80 days	75 to 80 days.
(iv) No. of tillers	:	3 to 4	4 to 6
(v) Earhead girth	:	10 to 12 cms.	8 to 10 cms.
(vi) Earhead length	:	30 to 35 cms.	20 to 25 cms.
(vii) Earhead shape	:	Conical	Cylinderical tappering at one end.
(viii) Presence of Bristles	:	Yes	No
(ix) Colour of Bristle	:	Pink	..
(x) Colour of Earhead	:	Blackish pink of mature Earhead.	Green
(xi) Grain character	:	Bold grain, Pearly shining slate. 1000 grain wt. 10-12 gms.	Medium grain. slate dull colour. 1000 grain wt. 7 to 8 gms.
(xii) Seed yield per Ha	:	10 to 15 qtls.	12 to 15 qtls.
(xiii) Colour of Node	:	Green	Pink colour
(xiv) Pubescence of leaves	:	Smooth	Smooth
(xv) Leaf colour	:	Light yellowish green	Green

Agency responsible for maintaining breeder's stock : Research Department, Maharashtra Hybrid Seeds Co. Ltd., Jalna.

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19. Name of the crop : *Sorghum*
Name of the variety : *CSV*-10 (SPV-346)
Sponsored by : Mohan Lal Sukhadia University, Udaipur.
Parentage with details of its pedigree : The variety has been developed from the cross SB 1066 × CS 3541.

Description of the Variety :

(a) Plant height : 190-220 cm.

(b) Distinguishing morphological characters :

(i) Stem : Medium thick, juicy, internodes are enclosed in leaf sheath.
(ii) Pigment on plant : Tan
(iii) Leaf colour : Green
(iv) Leaf size : Large
(v) Leaf position : Semi erect
(vi) Ear head shape : Oval, well exserted, boot leaf near the ear head base tip of the head tending towards flatness and never pointed at the top.
(vii) Peduncle : Medium thick
(viii) Ear head compactness : Compact
(ix) Glume colour : Straw coloured
(x) Glume size : Short
(xi) Seed colour : White pearly shining
(xii) Seed size : Medium bold
(xiii) 1000 grain weigtht : 30.0 gms.
(xiv) Seed shape : Round

(c) Maturity (range in number of days) : Flowering : 60-65 days—Maturity : 100-110 days.

Agency responsible for maintaining breeder's stock : Sorghum Breeder, AICSIP, Rajasthan College of Agriculture, Udaipur-313 001 (Rajasthan).

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20. Name of the crop	: *Sorghum*
Name of the variety	: *CSV*-11 (SPV 351)
Sponsored by	: All India Coordinated Sorghum Improvement Project, IARI Regional Station, Rajendranagar, Hyderabad-500 030 (Andhra Pradesh).
Parentage with details of its pedigree	: The variety was derived by pedigree selection from the cross SC-108-3 × CS-3541 and bears the selection No. 19-1.
Description of the Variety :	
(a) Plant height	: Range 160 to 190 cms.
(b) Distinguishing morphological characters :	
(i) Leaf	: Medium size and tan coloured.
(ii) Stem	: Medium thick, moderately juicy, Internodes are fully covered, tan coloured
(iii) Earhead	: Semi open, spindle shaped, well exserted, medium thick peduncle.
(iv) Glumes	: Shorthand straw coloured.
(v) Seed	: Medium size, pear shaped, thin pericarp, light creamy colour.
(c) Maturity (range in number of days)	: 110-115 days.
(d) Reaction to major diseases	: Resistant to foliar diseases and moderately resistant to downy mildew, charcoal rot and head molds.
(e) Reaction to major pests	: Tolerant to shootfly, stem borer and midge.
(f) *Agronomic feature:*	
(i) Lodging	: Non-lodging
(ii) Drought	: Tolerant
(iii) Suitable for early or late plantings	: Suitable for early plantings.
(iv) Plant population	: 1,80,000 plants/hectare with 45×15 cm spacing for higher yields.
Agency responsible for maintaining breeder's stock	: ICRISAT, Patancheru - 502 324 (Andhra Pradesh).

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21. Name of the crop	: *Sorghum (Forage)*
Name of variety	: *Rajasthan Chari*-1 (RC-1)
Sponsored by	: Mohan Lal Shukhadia University, Udaipur - 313 001 (Rajasthan).
Parentage with details of its pedigree	: This variety developed from cross CSV 6 × NCL 3.
Description of the Variety :	
(a) Plant height	: 190-220 cm.
(b) Distinguishing morphological characters :	
(i) Stem thickness	: Medium (3.5 to 4.0 cm)
(ii) Pigment on plant	: Normal
(iii) Leaf colour	: Dark green
(iv) Leaf length	: 80 to 90 cm.
(v) Leaf breadth	: 6.0 to 6.5 cm.
(vi) Early vigour	: Medium (2.0 to 2.5)
(vii) Leaf/stem ratio	: Good (0.30)
(viii) No. of leaves	: 12-15
(ix) Distinguishing characters	Medium late, tall plants with normal plant colour broad drooping leaves thick stem oblong shaped ear head exserting fully from the flag leaf and white chalky bold grains.
(i) Days to flowering initiation	: 75-80 days
(c) (ii) Days to 50% flowering	: 85-90 days
Agency responsible for maintaining breeder's stocks	: Sorghum Breeder, AICSIP, Rajasthan College of Agriculture, Udaipur-313 001.

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22. Name of the Crop	: *Sorghum (Forage)*
Name of the variety	: *Pusa Chari*-9 (PC-9)
Sponsored by	: Head, Division of Genetics, IARI, New Delhi-12.
Parentage with details of its pedigree	: Selection from IS 4870, Durra group of Sorghum bicolour of Indian origi collection from Himmatpur.
Description of Variety :	
(i) Plant height	: 233 cms.
(ii) Days to 50% flowering	: 82 days.
(iii) Seed maturing	: 100-120 days.
(iv) Spike	: Large, semi-loose, straight/Goose necked.
(v) Seed colour	: White.
(vi) Seed genetic marker	: Faded brown spot at micropylar end.
Agency responsible for maintaining breeder's stocks	: Division of Genetics, IARI, New Delhi in collaboration with Head, IARI, Regional Station, Karnal.

23. Name of the crop	: *Sorghum (Forage)*
Name of variety	: *Pusa Chari*-23
Sponsored by	: Head, Division of Genetics, IARI, New Delhi-12.
Parentage with details of its pedigree	: Selection from an exotic F1, hybrid Martin × 907010. Sudan group derivative of exotic origin collection from Purdue University, USA.
Description of Variety :	
(i) Days to 50% flowering	: 50
(ii) Seed maturity	: 80-100
(iii) Plant height	: 172 cm.
(iv) Greenness of leaves	: Longer duration, profuse lateral branching.
(v) Spike	: Large, loose, profuse lateral spikes.
(vi) Seed colour	: Purple/red enclosed in glumes.
Agency responsible for maintaining breeder's stocks	: Division of Genetics, IARI, New Delhi in collaboration with Head, IARI, Regional Station, Karnal.

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24. Name of the crop	*Sorghum*
Name of variety	: *UP Chari*-2
Sponsored by	: G.B. Pant University of Agriculture and Technology, Pantnagar, Nainita (U.P.)
Parentage and breeding methods used	: Developed from the cross between released variety Vidisha 60-1 and germplasm line IS 6953. Following the pedigree method, the material was selected.
Description of the Variety :	
(i) Growth habit	: Erect
(ii) Height	: 240 cm - 275 cm.
(iii) Colour of stem and foliage	: Tan plant type, light green, foliage and stem colour with very broad and long leaves.
(iv) Panicle shape and size	: Oval shaped, medium compact, medium to heavy panicles.
(v) 50% flowering	: 75-80 days.
(vi) Maturity	: 105-110 days.
(vii) Panicle size	: 15-20 cm. long.
(viii) Grain character :	
(a) Colour	: Pearly white
(b) Size	: Medium to bold
(c) Shape	: Round
(d) 1000 grain weight	: 22 to 24 gram
Agency responsible for maintaining breeder seed's stocks	: G.B. Pant University of Agriculture and Technology, Pantnagar, Nainital, U.P.

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25. Name of the crop	: *Barley*
Name of the variety	: *BH*-75
Sponsored by	: Haryana Agricultural University, Hissar.
Parentage with details of its pedigree	: RD 150 Ahor 131/68.
Description of Variety :	
(i) Plant height	: 95 cm.
(ii) Distinguishing morphological characters	: Dwarf, hulled, six rowed, mid-lax spikes, yellow grains of medium size, profuse tillering, matures one week earlier than BG 25.
(iii) Days to maturity	: 121 to 125 days.
(iv) Reaction to major diseases	: It showed trace infections to yellow rust and *Helminthosporium* as against moderate infections of both the diseases on BG 25.
Agency responsible for maintaining breeder seed	: Department of Plant Breeding, Haryana Agricultural University, Hissar.

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26. Name of the crop	: *Wheat*
Name of variety	: *WH*-283
Sponsored by	: Haryana Agricultural University, Hissar.
Parentage with details of its pedigree	: Variety WH-283 is developed from a simple cross, HD 1981 × Raj. 821.
Description of Variety :	
(i) Plant height	: About 104 cm.
(ii) Distinguishing morphological characters	: WH-283 is a double dwarf, early maturing variety. It has profuse tillering with dark green and dropping leaves. It bears fusiform ear heads with white and smooth glumes. It has amber, hard and shining grains.

(iii) Days to maturity : About 133 days.

(iv) Reaction to major diseases : It showed high degree of resistance to all the three rusts in Haryana. Maximum reaction of 1s to brown rust and 5s to yellow rust were recorded on this variety. Seedling reactions of this variety to leaf rust and yellow were reported to be R type to all the prevalent races. This variety also exhibited very low incidence of Karnal blunt.

Agency responsible for maintaining breeder seed : Department of Plant Breeding, Haryana Agricultural University, Hissar.

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27. Name of the crop : *Paddy* (*Rice*)

Name of variety : *Mansarover* (*IET*-6314)

Sponsored by : All India Coordinated Rice Improvement Project, Rajendranagar, Hyderabad-500 030 (Andhra Pradesh).

Parentage with details of its pedigree : Designation : RP1045-23-2-1(IET 6314)-Combination : RP 31-49-2 × Leb Mue Nahng RP-31-49-2 is a derivative of the cross IR-8 × Sigadis.

Description of variety : Medium statured (105-110 cm) (with medium long leaves with medium breadth). All plant parts green; grains short bold with straw hull: awnless white kernel.

Plant height : Medium statured (105-110 cm)

Distinguishing morphological characters : The variety has short bold grains (length 5.44-5.59 mm; breadth 2.45-2.55 mm and L/B ratio 2.46 mm).

Maturity (range in number of days) seeding/transplanting to flowering seed to seed : 150 days in *Kharif* — **160 days in *rabi*.**

Agency responsible for maintaining breeder's stocks : All India Coordinated Rice Improvement Project, Rajendranagar, Hyderabad 500 030 (Andhra Pradesh).

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8. Name of the crop : *Brinjal*

Name of variety : *Pant Samrat* (*PBR*-129-5)

Sponsored by : G.B. Pant University of Agriculture and Technology, Pantnagar.

Parentage with details of its pedigree : PBR-129-5 has been developed through pure line selection in a germplasm line collected from UP Tarai.

Description of variety :

(i) Plant height : 80-100 cm.

(ii) Distinguishing morphological characters : Tall, robust, broad leaved, green foliage, medium long attractive purple colour fruit in clusters.

(iii) Maturity : Days to I picking from trnasplanting-70 days.

(iv) Duration of availability of produce and possibility of extending the crop period : About 3 months in rainy season planting and 2 months in spring-summer planting.

(v) Reaction to major diseases in field and also under controlled conditions : High level of resistance to Phomopsis blight and bacterial wilt under field conditions. Similar to PPL and H 4 for reaction to Nematodes.

Agency responsible for maintaining breeder seed : G.B. Pant University of Agriculture and Technology, Pantnagar, Nainital Uttar Pradesh.

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29. Name of the crop : *Cauliflower*

Name of variety : *Pant Subhra* (114-S)

Parentage with details of its pedigree : 114-S has been developed through simple recurrent selection in PI 277275.

Description of variety :

(a) Stalk length : Medium (8-10 cm)

(b) Distinguishing morphological characters : Semi-erect outer leaves, inner leaves partially covering the curds compact and slightly conical, creamish white curd colour.

(c) Maturity : 50% curds attaining marketable stage—103-136 days.

(d) Duration of availability of produce and possibility of extending the crop period : 25-35 days.

(e) Reaction to major diseases in field and also under controlled conditions : No specific disease has been observed in epidemic form. It is relatively free from black rot and *Alternaria* leaf spot under field conditions in Pantnagar like control varieties.

Agency responsible for maintaining breeder seed stock : G.B. Pant University of Agriculture and Technology, Pantnagar.

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30. Name of the crop : *Cotton*

Name of variety : *Supriya*

Sponsored by : Project Coordinator (Cotton) & Head, Central Institute for Cotton Research, Regional Station, Coimbatore 641 003.

Pedigree : *MCU.* 5 × *C.* 1998

Description :

(a) Plant height	80-100 cms.
(b) Distinguishing morphological characters :	
(i) Habit	Compact plant type
(ii) Number of monopodia	0-1
(iii) Number of sympodia	12-15
(iv) Leaves	Dark green, medium sized, 3-5 lobed and light to medium hairy.
(v) Corolla	Cream
(vi) Pollen	Yellow
(vii) Bolls	Round, slightly pitted with 4 locules, boll weight 4.5. to 5.0 gm.
(viii) Seed	White, fuzzy, seed index 10.5 gm.
(c) Maturity in days (from seed to seed)	140-145 days.
Agency responsible for maintenance of Breeder's stocks	Project Coordinator (Cotton) & Head, Central Institute for Cotton Research, Regional Station, Coimbatore-641 003.

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31. Name of the crop	*Groundnut*
Name of the variety	*Kaushal* (*G*-201)
Sponsored by	Breeder (Groundnut), Groundnut Research Station, Mainpuri.
Parentage with details of its pedigree	A natural mutant picked up from the variety type-28.

Description of variety/hybrids :

(a) Plant height	32-35 cm.
(b) Distinguishing morphological characters	Erect in habit, profusely branched; foliage dark green even at maturity
(c) Maturity (range in number of days):	
Rainfed	*Irrigated*
108—112 days	118-120 days
Agency responsible for maintaining breeder's stocks	Breeder (Groundnut), Groundnut Research Station, Mainpuri.

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32. Name of the crop	*Cassava*
Name of variety	*Sree Sahya* (H-2304)
Sponsored by	Central Tuber Crops Research Institute, Trivandrum-695 017 (Kerala)

Parentage with details of its pedigree :

H-2304 (Developed from multiple cross)

Ac. No. 468 × Ac. No. 174

3027 × S-1310 Ac. No. 82 × M-4

3939(8) × 3588(1)

H-2304 (Sree Sahya)

Description of the variety :

(a) Plant height/plant spread/stem girth/branching habit	2.0—2.5 m/8.66 cm/predominantly non-branching.
(b) Distinguishing morphological characters i.e. leaf/shape/leaf colour/no. of lobes	Palmately deep lobed/emerging leaf light sepia/7-9 lobes; petiole purple in colour.
(c) Maturity (range in number of days) seeding/planting to tuber harvest.	300-320 days.
(d) No. of days for initiation of tuberization	22-26 days.
Agency responsible for maintaining breeder's stocks	CTCRI, Sreekariyam, Trivandrum - 695 017 (Kerala).

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33. Name of the crop	*Cassava*
Name of variety	*Sree Visakham*
Sponsored by	Central Tuber crops Research Institute, (ICAR), Sreekariyam, Trivandrum-695 017 (Kerala).
Parentage with details of its pedigree	1687 (developed from single cross). Ac. No. 1501 ×S-2312—H-1687 (Sree Visakham)

Description of variety :

(a) Plant height /plant spread/stem girth/branching habit.	1.5-2.0 m/7.86 cm/occasionally branching.

(b) Distinguishing morphological characters i.e. leaf shape/leaf colour/No. of lobes.	Palmately deep lobed/emerging leaf-light sepia 7-9 lobes; petiole with purple ring at the base.
(c) Maturity (range in number of days) seeding/planting to tuber harvest	270-300 days.
(d) No. of days for initiation of tuberization	22-26 days.
(e) Reaction to major diseases in the field and also under controlled conditions (reaction to physiological strains races/biotypes to be indicated wherever possible).	Field tolerant to CMD and Cercospora leaf spot.
Agency responsible to maintain the breeder's stock	CTCRI, Sreekariyam, Trivandrum (Kerala).

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34. Name of the crop	*Maize*
Name of the variety	*Diara*-3 (*ZFS*-3)
Sponsored by	All India Coordinated Maize Improvement Project of the ICAR.
Parentage with details of its pedigree	This variety has been developed from composite Diara through three cycles of full family sib selection. Selection programme was carried out as a part of national population improvement programme at Bahraich, Dholi, Godhra, Kanpur, Sabour and Varanasi. Elite full-sib families were selected for the synthesis of the improved variety.
Description of variety :	
(a) Plant height	1.5—1.7 metres
(b) Distinguishing morphological character	It is very early maturing variety with short slender stalk with spares foliage. It has yellow semi-flint grain.
(c) Maturity (range in number of days) Seeding/Transplanting to Flowering—Seed to Seed.	It silks in 40-45 days and matures in 75-80 days. It is very much comparable to Diara.
(d) Reaction of major diseases in the field and also under controlled condition (reaction to physiological strains/races/biotypes to be indicated whatever possible).	Comparable to composite Diara.
Agency responsible for maintaining breeder's stocks	All India Coordinated Maize Improvement Project.

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35. Name of the crop	*Maize*
Name of variety	*D*-765
Sponsored by	All India Coordinated Maize Improvement Project.
Parentage with details of its pedigree	It was developed from 16 F2 populations involving D 747 and local open pollinated varieties. The resultant base population was improved through selective sib mating.
Description of variety :	
(a) Plant height	1.5-1.7 metres
(b) Distinguishing morphological characters	It is a very early maturing composite variety, short in stature. Plants have sparse foliage.
(c) Maturity (range in number of days) Seeding/Transplanting to flowering—seed to seed	Takes 75-80 days to mature and 40-45 days to silk. It is comparable in maturity to Diara.
Agency responsible for maintaining breeder's stocks	All India Coordinated Maize Improvement Project.

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36. Name of the crop	*Foxtail* (*Millets*)
Name of variety	*Nallamala Korra/Nandyal Korra*-2
Sponsored by	Senior Scientist (Millets), Regional Agricultural Research Station, Palem P.O., Mahabubnagar Distt.
Parentage	A pure line selection from Garladinne village, Dronachalam Taluk, Kurnoo- District. (A.P.).
Description of the variety :	
(a) Plant height	110 cm.
(b) No. of tillers/plant	3-4
(c) Panicle length	14 cm.
(d) Shape of panicles	Medium in size, slightly thick, cylindrical and compact. Seed densely packed. Tip slightly blunt.
(e) Awns/bristles	Small to medium and uniformly distributed.
(f) Grain size and colour	Bold, light yellow in colour.
(g) Maturity	78 to 80 days.
(h) Lodging	Non lodging.

Distinguishing morphological characters : Selection S in 326 can be identified by the compact, thick panicles, slightly bulging in the middle and slightly blunt tip, as against the loose and long panicles of Arjuna. It is also early to Arjuna by about 4 to 6 days, with thin stems.

Maturity : 78 to 80 days.

Agency responsible for maintaining breeder's stocks : Breeder (Millets), Regional Agricultural Research Station, Nandyal-518 503.

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37. Name of the crop : Sugarcane
Name of variety : Sanjivini (CO-7219)
Sponsored by : Mahatma Phule Agricultural University, Rahuri.
Parentage with details of its pedigree :
Parentage : Co. 449 × Co. 658
Co. 449 : POJ 2878 × Co. 331
Co. 658 : Co. 443 × Co. 605

Description of variety :

(a) Plant height :

	Total	*Millable*
	Adsali 475 cm	380 cm
	Suru 285 cm	225 cm.

(b) Distinguishing morphological characters :
- (i) Cane colour — Greenish yellow
- (ii) Thickness — Medium (Girth 9.9 cms.)
- (iii) Alignment — Slightly staggered
- (iv) Joint :
  - (a) Shape-Cylindrical to conical
  - (b) Bud groove — Present
  - (c) Growth ring — Medium broad, slightly depressed.
  - (d) Root zone — Medium broad
  - (e) Node shape — Even
- (v) Bud :
  - (a) Size : Medium plumpy
  - (b) Shape : Tringular
- (vi) Leaf :
  - (a) Lamine — Medium broad, pale green colour semidropping.
  - (b) Sheath — Loose
  - (c) Spines — Very sparse.

(c) Maturity (range in no. of days) seedling/transplanting to flowering, seed to seed : Jan. planted (330 days) July/August planted (480 days) October/November planted (400 days).

Agency responsible for maintaining breeder's stock : Central Sugarcane Research Station, Padegaon. (Mahatma Phule Agricultural University).

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38. Name of the crop : Sugarcane
Name of variety : BO-91
Sponsored by : Rajendra Agricultural University, Pusa, Bihar.
Parentage with details of its pedigree : Bo 55 × Bo 43.

Description of variety:

(a) Plant height : 510 cms.

(b) Distinguishing morphological characters : Medium thick cane, long and cylindrical internode with light green with yellowish at the node, carriage spreading with medium broad deep green. Leaf sheath green with two dentoid auricles.

(c) Maturity (range in number of days) Seeding/Transplanting to flowering seed to seed : Maximum sucrose accumulation in main season i.e. after 15th of January in Sub tropics.

Agency responsible for maintaining breeder's stock : Sr. Sugarcane Breeder, S.R.I., Pusa.

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39. Name of the crop : Bidi Tobacco
Name of variety : Anand -2
Sponsored by :
(a) For Gujarat : Institute of Agriculture, Anand (Now Gujarat Agricultural University)
(b) For Nipani (Karnataka and Maharashtra States) : Project Coordinator (Tobacco).

Parentage with details of its pedigree : Line 88-47, a true breeding selection from K 492 × S 112, was crossed with Sokhadiu a local type.

Selection 169-2 (Anand 2) is a true breeding selection in F_9 generation of this cross.

Description of the variety :

(a) Plant height : 180-200 cms.

(b) Morphological characters :

—No. of leaves per plant	
—Untopped	25
—topped	20
—Length of internode	7 cm.
—Nature of stem	Thick, round.
—Leaf size	
—Av. length	70 cm.
—Av. width	33 cm.
—Base	Tapering, narrow
—Tip	Acute & short
—Margin	Entire
—Puckering	Moderate
—Surface	Rough
—Colour	
—unripe	Dark green
—Ripe	Yellow green
—Leaf thickness	Thick
—Spangles	Moderate
—Gumminess	Fairly gummy
—Inflorescence	Compound

Agency responsible for maintaining breeder's stocks : Gujarat Agricultural University.

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40. Name of the crop : Bidi Tobacco

Name of variety : Anand -119

Sponsored by :

(a) Institute of Agriculture, Anand (Now Gujarat Agricultural University)

(b) Project Coordinator (Tobacco)

Parentage with details of its pedigree : Line 88-47, a true breeding selection from K 492 × S. 112, was crossed with Sokhadiu, a local type.

Selection 169-119 (Anand 119) is a true breeding selection in F_9 generation of this cross.

Description of the variety :

(a) Plant height : 130—150 cm.

(b) Morphological characters :

—No. of leaves per plant	
—untopped	25
—topped	20
—Length of internode	5 cm.
—Nature of stem	Thick, round
—Leaf size	
—Av. length	60 cm.
—Av. width	40 cm.
—Base	Tapering, narrow
—Tip	Acute and abruptly tapering
—Margin	Entire
—Puckering	Moderate
—Surface	Rough
—Colour	
—Unripe	Dark green
—Ripe	Light green with yellow cast
—Leaf thickness	Thick
—Spangles	Moderate
—Gumminess	Fairly gummy
—Inflorescence	Compound.

Agency responsible for maintaining breeder's stocks : Gujarat Agricultural University.

ANNEXURE III

Important features of the Varieties recommended for Notification in the First Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop	:	Wheat		
2. Variety	:	GW-2		
3. Parentage	:	HDM-22550-3 × JA-3-3-1		
4. Breeder/Institute responsible for maintaining breeder stock	:	Research Scientist (Wheat), Gujarat Agril. University Vijapur, Distt. Mehsana		
5. Description of Variety (in case of hybrid, please give separate description of the parents)	:	*GW-2*	*A-9-30-1*	*A-206*
(1) Early growth habit	:	Errect	Errect	Errect
(2) Tillering capacity	:	Medium	Meduim	Medium
(3) Height in Cms	:	81	71	65-80
(4) Colour of stem and foliage	:	Pale green	Pale green	Deep green
(5) Heading days	:	64-68	64-68	65
(6) Maturity days	:	116	115	111
(7) Ear characters	:			
(a) Density	:	Dense	Dense	Dense
(b) Awning	:	Fully beared	Fully beared	Fully beared
(c) Awn colour	:	Brown	Brown	Brown
(d) Glume colour	:	Brown	Brown	Brown
(e) Glume pubescence	:	Glabrous	Glabrous	Glabrous
(8) Threshability	:	Medium	Medium	Medium
(9) Grain characters in comparison to check	:			
(a) Colour	:	Amber	Amber	Amber
(b) Texture	:	Hard	Semi Hard	Hard
(c) Size	:	Bold	Bold	Bold
(d) 1000 grain wt. in grms.	:	44.0	43.5	45.0
(10) Resistance to lodging in comparison to check	:	Medium	Medium	Medium
(11) Resistance to grain shattering in comparison to check	:	Good	Good	Good
6. Identifiable and distinguishable morphological characteristics	:			
(1) Colour of stem and foliage	:	Pale green	Pale green	Deep green
(2) Glume colour	:	Brown	Brown	Brown
(3) Glume pubescence	:	Glabrous	Glabrous	Glabrous

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1. Crop	:	Wheat
2. Variety	:	KDW-16 (Keerthi)
3. Parentage	:	Sonalika × Tob 66
4. Breeder/Institute responsible for maintaining the breeder's stock	:	I.R. Morabad Wheat Breeder, Regional Research Station, Dharwad.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	:	KDW-16 is 95 cms. in height as against 86 cms of HD 2189. The awns are prefuse and predominant to look. Earhead shape is cylindrical and blend at the end , which is quite conspicuous and dominant to look. Glumes arrangement in the flower is more loose and easy to thresh. It matures 8 days late than HD 2189. The grains are hard and lustrous and smaller by 2-3 cms than the grain of HD 2189 when 1000 grain weight is considered. The bread and chapathi characters are better than these of HD 2189.
6. Identifiable and distinguishable morphological characteristics	:	The size of the grain is smaller as compared to that of HD 2189 and height of the plant is taller by 5-10 cms than that of HD 2189. Ear shape is cylindrical and is dominant to look while that of HD 2189 is conical. Arrangement of spikelets on the exist is more thick while that of HD 2189 is sparse.

1.	Crop	Wheat
2.	Variety	KDW-137 (Kiran)
3.	Parentage	B. Yellow × A. 206
4.	Breeder/Institute responsible for maintaining breeder's stock	I.R. Morabad Wheat Breeder, Regional Research Station, Dharwad.
5.	Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	KDW-137 is short by 8-10 cms than B. Yellow. The stem, leaves and ear are waxy while those of B.Yellow are non-waxy. The crop of KDW-137 will mature slightly early by 4-5 days than B. Yellow. It is highly resistant to race 4282 and moderately resistant to 117A1 of blackstem rust disease while as B.Yellow is highly susceptible. The chapathi making characters are better than B. Yellow.
6.	Identifiable and distinguishable morphological characteristics.	The crop of KDW-137 is waxy while that of B. Yellow is non-waxy. The stem leaves and ears are waxy while those of B. Yellow are non-waxy. The crop of KDW-137 matures early than B. Yellow.

1.	Crop	Paddy
2.	Variety	Janki
3.	Parentage	Pure line selection from the chenab rice of North Bihar.
4.	Breeder/Institute responsible for maintaining breeder's stock	Rajendra Agricultural University, Bihar Agricultural Research Institute, Mithapur, Patna.
5.	Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	It is a tall type variety and have lodging tendency towards maturity. Janki possesses moderate degree of elongation capacity and highly submergence tolerant. It produces nodal roots and tillers. The leaves are long drooping type. It is a photoperiod sensitive variety and flowers in the 3rd week of October. Janki was tested in the variety trial from 1975 to 1982 and the performance of this variety was good. This variety was also performed well in the Minikit trails in 1978 and 1980 under farmers field conditions. It is suitable as direct sown as well as transplanted crops where water depth ranges from 50-150 cm under rainfed lowland condition.
6.	Identifiable and distinguishable morphological characteristics	(1) Leaf sheath, nodes and internodes husk stigma purple pigmented. (2) Long bold grain having mean length and breadth of 8.5 mm and 2.6 mm respectively with dull red kernal.

1.	Crop	Paddy	
2.	Variety	Sathi (34-36)	
3.	Parentage	Selection from local Sathi.	
4.	Breeder/Institute responsible for maintaining Breeder's stock.	Research Scientist (Rice), Main Rice Research Station, Nawagam.	
5.	Description of the variety		
(a)	Plant height	130-150 cms.	
(b)	Distinguishing morphological characters	Early maturing, suitable for drill condition. Plants are tall and medium tillering habit and long internode.	
		Plant colour	— Pale green
		Panicle	— long and thick.
(c)	Maturity (In days)	95 to 100 days (from seed to seed)	
(d)	Agronomical features	Non-lodging resistance, suitable for rainfed cultivation, low fertilizer requirement.	
(e)	Grain characters	(1) Grain length	—10.2 mm
		(2) Grain breadth	— 3 0 mm
		(3) 1000 grain wt.	—31.5 gms.
		(4) Classification	—Very coarse
		(5) Kernal colour	—Dull white
		(6) Milling %	—62%
6.	Identifiable and distinguishable morphological characteristics	(1) Foliage	: Pale yellow
		(2) Stem	: Thick but weak
		(3) Leaves	: Broad andplace green.
		(4) Panicle	: Long and thick (31 cms) Crop get lodge at maturity.

1.	Crop	Paddy
2.	Variety	Pratap (OR 131-3-1)
3.	Parentage	Kumar × CR. 57-49
4.	Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Department of Plant Breeding, OUAT, Bhubaneswar.
5.	Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	Plant height 73 cms. No. of panicles per sq. mt. 330, No. of grains per panicle 80, 1000 grain wt. 18.4 gms.
6.	Identifiable and distinguishable morphological characteristics	Pigmentation of apiculus and stigma.

1.	Crop	Paddy
2.	Variety	Daya (OR. 131-13-13)
3.	Parentage	Kumar × CR 57-49
4.	Breeder/Institute responsible for maintaining breeder's stock.	Rice Research Station, OUAT, Bhubaneswar.
5.	Description of variety/ hybrid (in case of hybrid, please give separate description of the parents)	Plant height 70.8 cm., Hull dull straw coloured, maturity 120-125 days tillering moderate, 1000 grain wt.—20 gms.
6.	Identifiable and distinguishable morphological characteristics	Hull dull straw coloured.

1.	Crop	Paddy
2.	Variety	Utkal Prava (CR-1030)
3.	Parentage	Waikoku × CR 1014
4.	Breeder/Institute responsible for maintaining breeder's stock	Central Rice Research Institute, Cuttack-753006 (Orissa).
5.	Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	Tall growing variety, all parts green. Medium slender, grain strongly photosensitive, flowers around 20th October.
6.	Identifiable and distinguishable morphological characteristics	(1) Tall growing, photosensitive. (2) Flowering around 20th October.

1.	Crop	Paddy
2.	Variety	Suphala (OR 45-21-63)
3.	Parentage	T 141 × TN 1
4.	Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Orissa University of Agriculture & Technology Bhubaneswar (Orissa).
5.	Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	Plant height at maturity is about 70 cm; high tillering ability; maturity; duration : 95 days in Kharif, 105 days in rabi; small slender grain.
6.	Identifiable and distinguishable morphological characteristics	Short plant height, Small slender kernal with straw coloured hull.

1.	Crop	Paddy
2.	Variety	Parijat (IET 2684) (OR 34-16)
3.	Parentage	TKM 6 × TN 1
4.	Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Orissa University of Agriculture and Technology, Bhubaneswar (Orissa).
5.	Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	Plant height at maturity is about 85 cm, green in all parts, matures in about 95 days in kharif and 115 days during rabi.
6.	Identifiable morphological characteristics	Medium slender kernal, hull colour at maturity straw.

1.	Crop	Paddy
2.	Variety	Keshari IET 6215 (OR 63-252)
3.	Parentage	Kumar x Jagannath
4.	Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, OUAT, Bhubaneswar (Orissa).
5.	Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	Short plant height : high tillering ability : matures in 95 days in kharif and 110 days in rabi; grain short slender with brown hull.
6.	Identifiable and distinguishable morphological characteristics	Hull brown Grain short slender.

1. Crop	:	Paddy
2. Variety	:	Jajati OR 47-2 (IET 7284)
3. Parentage	:	Rajeswari × T 141
4. Breeder/Institute responsible for maintaining the breeder's stock	:	Rice Research Station, OUAT, Bhubaneswar, (Orissa)
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Intermediate plant height (110 cm) light green leaves; matures in 135 days in kharif and 120 days in rabi.
6. Identifiable and distinguishable morphological characteristics.	:	Intermediate plant height, Short slender grain with straw coloured hull.

1. Crop	:	Paddy
2. Variety	:	MTU-7029
3. Parentage	:	Vasista/Mahsuri
4. Breeder/Institute responsible for maintaining the breeder's stock.	:	Agricultural Research Station, Marutoru.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Grain is dirty in furrows on ripening. Rice is classified as medium slender.
6. Identifiable and distinguishable morpholoigcal characteristics.	:	Semi dwarf plant type. Dark green foliage. It is a profuse tillering variety.

1. Crop	:	Paddy
2. Variety	:	MTU-6024
3. Parentage	:	I.R. 8/SLO 13
4. Breeder/Institute responsible for maintaining the breeder's stock	:	Agricultural Research Station, Maruteru.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Glumes dirty in frurrows on ripening. Long and bold rice.
6. Identifiable and distinguishable morphological characteristics	:	Semi dwarf plant type. Dark green foliage and late leaf senescence. Boot leaf is short and erect. The variety is weakly photosensitive.

1. Crop	:	Paddy
2. Variety	:	IET 1722
3. Parentage	:	IR.8 × Tadukan
4. Breeder/Institute responsible for maintaining the breeder's stock	:	Tamilnadu Rice Research Institute, Aduthurai.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	:	

		Parents	
	IET 1722	IR.8	Tadukan
1. Plant height (CM).	80	80	120
2. Anthocyanin pigment	absent	absent	absent
3. Intermode	Light green	Green	Light green
4. Leaf sheth	Green	Green	Green
5. Palainus	Green	Green	Green
6. Septum	Cream	Cream	Cream
7. Leaf axile	Light green	Green	Light green
8. Juncture	White	White	White
9. Ligule	White	White	White
10. Anricle	White	White	White
11. Pancile	Medium sparke	Medium compact	Medium sparke
12. Lemma & Palea	Green when fresh straw on ripening	Green when fresh straw ripening	Green when fresh straw ripening.

	IET 1722	IR. 8	Tadukan
13. Apiculus	Green	Green	Green
14. Husk colour	Straw	Straw	Straw
15. Abdominal white	Occasionally	Present	Present
16. Rice	White translucent	White translucent	White translucent
17. Length of grain (M.M.)	9.2	9.1	8.1
18. Breadth of grain (mm)	5.4	3.1	2.8
19. L/B Ratio	3.8	2.9	2.9
20. Thickness of grain (MM)	1.9	2.2	2.1
21. 1000 grain weight	24.9	28.9	21.3

22. Identifiable characters : Absence of anthocyanine pigment.

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1. Crop : Paddy
2. Variety : Sugandha
3. Parentage : Pure line selection from Basmati rice of Cuttack.
4. Breeder/Institute responsible for maintaining breeder's stock. : Rajendra Agricultural University, Bihar Agricultural Research Institute Mithapur, Patna.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents) : Tall stature, lodging tendency at maturity. Nodes, internodes and foliage are light green. The panicle exsertion is complete and tillering ability is also good. The plant type is open and sensitive to photoperiod. It flowers in the 3rd week of October.
6. Identifiable and distinguishable morphological characteristics : (i) Plant height 130-140 cm, awnless spikelets with golden husk at maturity· (ii) Medium slender grain having mean length and breadth of 4.53 mm and 2.88 mm respectively. It also possesses good aroma, white translucent kernel and good cooking quality.

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1. Crop : Sorghum
2. Variety : Gujarat Sorghum-35
3. Parentage : This variety is developed from the cross of (2077 A × M 25) X Malvan.
4. Breeder/Institute responsible for maintaining the breeder's stock : Research Scientist (Sorghum) All India Coordinated Sorghum Improvement Project, G.A.U. Surat.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents) : The new variety is better in yielding potentiality alongwith tolerance to major diseases and pests. The seeds are pearly white preferred by the consumers. It is semi dwarf and medium late maturing variety. It is resistant to grain mold and shootfly. Earhead of the variety is medium long and semi-compact.
6. Identifiable and distinguishable morphological characteristics : Earhead is open, leaves are dark green. Seed colour is pearly white and covered halfway by glume Plant colour is tan. It is high-yielding variety and on an average it has given 52.7% higher grain yield than GJ 108 over different locations in the State.

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1. Crop : Sorghum
2. Variety : Gujarat Sorghum Hybrid-1
3. Parentage : The hybrid has been developed from the cross of male sterile-2077A and fertility retorer male line NSV 13. The male sterile line has been developed at the AICSIP, Hyderabad. Male parent NSV 13 was developed at AICSIP, Navsari from the segregating material generated by the post graduate student.
4. Breeder/Institute responsible for maintaining breeder's stock : Research Scientist (Sorghum), AICSIP, GAU, Surat.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parants) : It is a *Kharif* and late Kharif sown hybrid developed at Navsari. It has given/ yield than CSH. 6. It is an early maturing dwarf hybrid, it possesses white pearly grains and is acceptable to consumers. It is moderately resistant to grain mold. The nicking of the parents in this hybrid is suitable for seed production in Gujarat State.

PARENTS

Characters	GSH-1	2077A female parent of GSH-1	NSV 13 (Male parent of GSH-1)
1. Plant height (cm)	170-180	125-135	140-150
2. Days to 50% bloom	68-70	70-75	70-75
3. Days to maturing	105-15	120-125	115-120
4. Stem thickness	Thick	Thick	Medium
5. Pigment of plant	Tan	Tan	Tan
6. Leaf colour	Green	Green	Green
7. Leaf size	Broad	Broad	Medium
8. Peduncle	Elongated	Elongated	Elongated
9. Earhead shape	Spindle	Spindle	Spindle
10. Length of earhead	Long	Medium	Medium
11. Earhead compactness	Compact	Semi compact	Very compact
12. Glume colour	Straw	Straw	Straw
13. Glume size	Medium	Medium	Short
14. Seed colour	Pearly	Pearly	White pearly
15. Seed size	Medium	Bold	Medium
16. Seed Shape	Roundish	Roundish	Roundish

1. Crop : Sorghum
2. Variety : S.B. 1066
3. Parentage : Selection from an introduction from purdue, base number 954, source number 166024
4. Breeder/Institute responsible for maintaining the breeder stock : Sorghum Breeder, A.I.C.S.P. Dharwad Campus, University of Agril. Sciences Bangalore.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents). : It grows to an height of 150-160 cm. It matures in about 105-110 days in kharif season. Early maturing as CSH-1.
6. Identifiable and distinguishable morphological characteristics : Semi-erect leaves which helps to accommodate more population per acre Since it is early, it withstands drought. Earheads are semicompact and cylindrical.

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1. Crop : Maize
2. Variety : Composite Suwan
3. Parentage : Suwan-1 (Yellow)
4. Breeder/Institute responsible for maintaining the breeder's stock : Maize Breeder, R.A.U., T.C.A., Dholi.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parent) : This composite is suitable for kharif season and the grain is orange yellow flint.
6. Identifiable and distinguishable morphological characteristics : The stem base is of light purple in colour, the leaves are dark green and the grain is orange yellow flint.

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1. Crop : Barley
2. Variety : Kadar (DL 36)
3 Parentage : BG1 × K 71
4. Breeder/Institute responsible for maintaining the breeder's stock : Head, Division of Genetics, IARI, New Delhi.

5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents
   - (i) Plant height (cm) : 90-100 cm (medium height)
   - (ii) Stem and foliage distinct features : Erect growth habit; Medium broad leaves.
   - (iii) Distinct spike characters : 6-rowed, spikes-lax, mid long to long bold, parallel, erect to slightly, inclined, lemma awns long and smooth: Lemma glaucous (non waxy at flowering stage.)
   - (iv) Distinct seed characters : Hulled, slightly wrinkled to semiwrinkled kernel white medium bold with 1000 kernel weight of 36-42 gms.
   - (v) Seed to seed duration (days) : 125-135 days
6. Identifiable and distinguishable morphological characteristics : Lemma awns long and smooth, Lemma glaucous at green stage.

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1. Crop : Ragi (Finger millet)
2. Variety : Nilachal (B-4-10-56)
3. Parentage : IE 642, a selection from the M3 progenies after chemical medogenesis.
4. Breeder/Institute responsible for maintaining breeder's stock. : Department of Plant Breeding and Genetics, College of Agriculture, OUAT, Bhubaneswar.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents) : Plant height 95-100 cms. maturity 100-126 days, Light Brown & medium bold grain, semicompact with about 3.1 productive tillers and top incurb panicles of about 6.8 cms long, Photosensitive.
6. Identifiable and distinguishable morphological characteristics : Semicompact with about 3.1 productive tillers and top incurb panicles about 6.8 cms. length.

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1. Crop : Ragi (Finger millet)
2. Variety : Simhadri
3. Parentage : Pure line selection from local collection of Moida village near Vizianagaram VM No. 311 and single plant selection No. VR-250-6.
4. Breeder/Institute responsible for maintaining the breeder's stock. : Asstt. Millet Breeder, Agri. Res. Station, Vizianagaram.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents) :
   - Plant Height : 94 cm
   - No. of tillers/Plant : 3—4
   - Panicle : Incurred
   - Days to 50% Bloom : 76
   - Days to maturity : 106
   - Plant pigmentation : Green throughout
   - No. of fingers per head : 7-8
   - Length of earhead : 7.8 cm
   - Length of finger : 7.9 cm
   - Grain colour and size : Brown Bold.
6. Identifiable and distinguishable morphological characteristics :
   - (1) Green throughout
   - (2) Big incurved earheads.

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1. Crop : Nagli (Finger millet)
2. Variety : Gujarat Nagli-1
3. Parentage : Selection from local collection from district Dangs.
4. Breeder/Institute responsible to maintaining the breeders stock : Hill Millets Research Station, GAU, Waghai, Distt. Dangs.
5. Description of the variety/hybrid (in case of hybrid please give separate description of the parents). : The plant stature is semi dwarf (95 cm) with better tillering (3.0 tillers/plant
6. Identifiable and distinguishable morphological characteristics : The fingers are curved and compact possessing red brown grains.

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1. Crop : Kodara (Kodomillets)
2. Variety : Gujarat Kodara-1
3. Parentage : Early selection from IPS-19 from AICMP tried at Hill Millets Stations Waghai, Dist. Dangs.
4. Breeder/Institute responsible for maintaining the breeder stock : Hill Millets Research Station, GAU, Waghai Distt. Dangs.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents) : The plants are medium with glabrous stem. The pods are swelled.
6. Identifiable and distinguishable morphological characteristics : The leaves are green, narrow with dark tinge near the leaf joint. The panicle is long with brown and bold grain.

1. Crop	Vari
2. Variety	Gujarat Vari-1
3. Parentage	Selection from Local strain vari 8-3.
4. Breeder/Institute responsible for maintaining the breeder's stock	Hill Millets Research Station, GAU, Waghai, Distt. Dangs.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	The plants are medium tall with attractive pinkish stem and panicle.
6. Identifiable and distinguishable morphological characteristics	It has a typical blunt tip shaped earhead with lustrous grains.

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1. Crop	Cotton
2. Variety	Lohit
3. Parentage	Selection from sanguineum germplasm and named as Sanguineum-4.
4. Breeder/Institute responsible for maintaining the breeder's stock.	Economic Botanist, C.R.C. Bulandshahr, GB Pant Univ. of Agri. & Tech., Pantnagar.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	(i) Plant height : 90-110 Cms. (ii) Branching : 5 to 6 monopodial & 12-18 sympodial branches. (iii) Maturity : 160-170 Days (iv) Halo length : 15-17.5 mm.
6. Identifiable and distinguishable morphological characteristics	(i) Colour of leaf —green with purple tinge on veins and stem. (ii) Seed Ash —coloured and less fuzzy. (iii) Bolls purple, medium sized and roundish.

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1. Crop	Cotton
2. Variety	N.A. 247
3. Parentage	A 179 × Pope
4. Breeder/Institute responsible for maintaining the breeder's stock.	Regional Agricultural Research Station, Nandyal.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	This variety N.A. 247 belongs to G. Hirsutum suitable for cultivation for rain-fed areas of Rayalaseema districts of Kurnool, Cuddapah and Anandapur districts in black soils in late kharif (August-September) sowings in place of Laxmi, Mahalaxmi Hampi (all G. hirsutm)

Parents

Plant habit	Erect
Sympodial	4-5
No. of effective monopodia	1
Average internodal length	5-6
No. of sympodia	14.4
Stem colour	Pigmented
Leaf	Medium size, dark green, 4-5 lobed, dark green foliage.
Flowers	Medium, corolla creamy white with buff colored pollen, petal spot absent bract medium size.
Boll	Medium size with mostly 4 locks, smooth, average boll length 4.0 cms with 2.9 cms breadth. Mean boll weight is 4.0 gms. Boll opening is good.
Seed	Seeds are fuzzy with white fuzzy hairs.
Maturity	(Range in number of days seeding/transplanting to flower/seed 150 to 160 days)

Earliness	*N.A.* 247
50% flowering	55 days
50% Boll bursting	100 days
No. of days for final picking	150 to 160 days

6. Identifiable and distinguishale morphological characteristics	:	(1) The plant habit is erect with one effective monopia and 14 sympodia and stem colour is pigmented. (2) The leaf is medium, dark green, 4 to 5 lobed with dark green foliage. The flower is medium *corolla creamy* white with *buff* pollen, bolls are smooth mostly 4 loculed.

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1. Crop	:	Cotton
2. Variety	:	DB-3-12-(Ajantha)
3. Parentage	:	Westerns-1 × B.S. 7-1
4. Breeder/Institute responsible for maintaining the breeder's stock	:	Assistant Plant Scientists(C)
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Dwarf, bushy compact and early plant type. Small, pale green leaves Bolls roundish and pitted.
6. Identifiable and distinguishable morphological characteristics	:	(1) Pale green foliage with pinkish pulvinus (2) Small yellow petals with saffron anthers .

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1. Crop	:	Groundnut
2. Variety	:	Gujarat Groundnut-2 (J-1/27-5-1)
3. Parentage	:	J-11 × EC -16659
4. Breeder/Institute responsible for maintaining the breeder's stock.	:	Research Scientist (Oilseeds) Gujarat Agricultural University, Junagadh.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents).	:	It is a bunch type dwarf and vigorously growing variety. Plant height is 1820 cm leaf shape are Unipinnate paripinnate compound leaf with four lanceolate shape leaf lets, and green in colour. Habit of flowering is sequencial. Pods size medium 2-1 seeded having medium reticulation, kernels are medium round in shape and rose in coloured testa. Days of flowering are 24 days of seeding and days to maturity are about 120.
6. Identifiable and distinguishable morphological characteristics	:	It is bunch type dwarf variety leaflet size are comparatively smaller than GAUG-1 and G-11. Pod size medium and kernels are medium round in shape and rose in coloured testa.

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1. Crop	:	Sesamum (Gingelly)
2. Variety	:	Kalika (BM 3-7)
3. Parentage	:	Binayak (A chemical induced mutant).
4. Breeder/Institute responsible for maintaining the breeder's stock	:	Breeder, Sesamum, OUAT.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Compact plant type, light brown seeds height –80 cm. in kharif and 60 cm. in summer. Maturity 82 days, widely adaptable and lodging resistant.
6. Identifiable and distinguishable morphological characteristics	:	Light brown seeds, glabrous 4-loculed capsule and short stature.

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1. Crop	:	Sesamum (Gingelly)
2. Variety	:	TMV-4
3. Parentage	:	Mass selection from Sattur
4. Breeder/Institute responsible for maintaining the breeder's stock.	:	Oilseeds Experiment Station, Tindivanam
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Stem shape : Angular Height upto 1st capsule : 25 cm.
(1) Plant height	:	87 to 118 cm
(2) Distinguishing morphological characters		
Stem colour	:	Green throughout
Stem shape	:	Angular
Height upto 1st capsule	:	25 cm
No. of primary branch	:	10
No. of nodes upto Ist capsule	:	8

Total no. of capsule	75-100	
Produced per plant	Placement at base	: Opposite
Leaf	above	: Alternate
	shape	: Cordate
	Tip	: Ocuminate One per axil
Flower	Number	
	Yellow gland	: Present
	'Y' Shape	: Present
	Corolla colour	: Very Pale
	Cresent	: Present & Distinct
	Pistil	Bifid (One per axil)
Capsule	Locule No.	: Four
	Length	: 2.4 cm
	Breadth	: 0.7 cm
	Tip	: Pointed
Seed :	Colour	: Light brown
C. Maturity :	85 to 90 days	
6. Identifiable and distinguishable morphological characteristics	(1) Profuse branching (than TMV. 3 branching starts from the 3rd node itself (2) Dark green leaves (3) Light brown seeds	

1.	Crop	: Green gram (*Mung*)
2.	Variety	: Jyoti (Hybrid 4-3)
3.	Parentage	: L. 24-2 × Pusa Baisakhi
4.	Breeder/Institute responsible for maintaining the breeder's Stock.	: Pulse Research Station, Nayagarh, Orissa.
5.	Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	: Average height –25.6 cms. Average no. of Branches—11 Average Pods per plant —15 nos. Medium height, shy branching, pointed curved pods are slender.
6.	Identifiable and distinguishable morphological characteristics.	: Leaf yellowish green, grains mottle dull black and resistant to Y.M.V. diseases.

1.	Crop	: Green gram (*Mung*)
2.	Variety	: *Sujata* (*Hy.* 12-4)
3.	Parentage	: L 24-2 × Pusa Baisakhi.
4.	Breeder/Institute responsible for maintaining the breeder's stock.	: Pulse Specialist, Pulse Research Station, Nayagarh, Orissa.
5.	Description of the variety/hybrid (in case of hybrid, please give separate description of the parents)	: The variety matures in 65-70 days, suitable for cultivation in Kharif, Pre-rabi & summer. Plants are 30-45 cms high, leaves small, pale green in colour flowers in 28-30 days, pods small (8-10 cm long), seeds small (100 grain weight 2.2 gram), shinning green in colour, plants resistant to yellow mosaic virus.
6.	Identifiable and distinguishable morphological characteristics.	: (i) Seeds small, shinning green in colour. (ii) Crop resistant to Y.M.V. disease.

1.	Crop	: Green gram (*Mung*)
2.	Variety	: Dhauli (TT 9E)
3.	Parentage	: T. 51 / Local type
4.	Breeder/Institute responsible for maintaining the breeder's stock	: Dr. B.N. Samolo, Chief Scientist, Pulses & Oilseeds, Regional Res. Station Chipilima.
5.	Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	: The variety is developed by mutation breeding from a stable type which was originally evolved from the cross T 51/Local type.
6.	Identifiable and distinguishable morphological characteristics.	: Light green leaves with long 2nd and 3rd internodes and dazzling green seeds.

1. Crop	Gram	
2. Variety	ICCC-4	
3. Parentage	The strain ICCC-4 was developed by ICRISAT, Hyderabad from a cross H 208×T-3 made in 1973-74.	
4. Breeder/Institute responsible for maintaining breeder's stock	Research Scientist, Pulses Research Project, GAU, Sardar Krishinagar-385 506.	
5. Description of variety hybrid (in case of hybrid, please give separate description of the parents).	(a) Plant height	40 to 50 cms.
	(b) Maturity days	Rainfed 105-110 Irrigated 110 to 115
	(c) Branches/Plant	Rainfed 4 to 5 Irrigated 6 to 7
	(d) No. of pods/plant	Rainfed 45 to 55 Irrigated 60-70
6. Identifiable and distinguishable morphological characteristics.	(a) Pod characteristics	Semi compact habit, single pod on primary, secondary and tertiary branches.
	(b) Seeds/pod	1·5
	(c) Colour of pod	Greenish
	(d) Seed colour	Brownish yellow
	(e) 1000 seed wt.	140.8 gms.
	(f) Foliage	leaves pinnately, compound with small leaflets.

1. Crop	Cowpea	
2. Variety	Gujarat Cowpea-2	
3. Parentage	Selection from local germplasm and tested as Chharodi-1.	
4. Breeder/Institute responsible for maintaining the breeder's stock	Research Scientist, Pulses Research Scientist, GAU, Sardar Krishinagar-385 506	
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	(1) Plant height	65 to 70 cms.
	(2) Maturity days	65 to 75
	(3) Branches/plant	4 to 6
	(4) No. of pods/plant	20 to 25
6. Identifiable and distinguishable morphological characteristics.		
(1) Pod characteristics	Thin short pods with pointed tip.	
(2) Pod bearing habit	Single pod remain upright above leaf canopy	
(3) Length of pod	10-12 cms.	
(4) Seed/pod	12-14	
(5) Colour of pod	Yellowish brown when matured.	
(6) Seed colour	Yellowish	
(7) 1000 seed weight	65 gms.	

1. Crop	Black gram
2. Variety	Sarala (B 12-4)
3. Parentage	A mutant selection from T. 9 variety.
4. Breeder/Institute responsible for maintaining the breeder's stock.	Dr. B.N. Samolo, Chief Scientist, Pulses & Oilseeds, Regional Res. Station Chipolima, OUAT
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	EMS induced mutant from T. 9 variety.
6. Identifiable and distinguishable morphological characteristics.	Segittate to hasitate type of leaves, Brownish to Black pods with brownish blackseeds.

1. Crop	Red gram (*Arhar*)
2. Variety	T-15-15
3. Parentage	Selection from local collection.
4. Breeder/Institute responsible for maintaining breeder's stock.	Research Scientist, AICRP (Pulses) Gujarat Agril. University, Sardar Krishinagar-385 506.

5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	(a) Plant height	150-200. Interminate growth habit.
	(b) Maturity days	About 200 days.
	(c) Branches/Plant	10-15
	(d) No. of pods	300-400
6. Identifiable and distinguishable morphological characteristics.	(a) Shape of pod	Medium sized, constricted pods with bold seeds.
	(b) Length of pod	4-5 cms.
	(c) Colour of pod	Green
	(d) Seeds/pod	3 to 4
	(e) Pod bearing habit	In cluster
	(f) Seed colour	Dirty white
	(g) 1000 seed weight	105 gm.

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1. Crop	Brinjal (Long)	
2. Variety	Azad Kranti	
3. Parentage	Banarsi Giant long & Pusa purple long.	
4. Breeder/Institute responsible for maintaining the breeder's stock.	Economic Botanist (Vegetables), C.S. Azad Univ. of Agri. & Tech., Kanpur.	
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	Semit-all (70-80 cm) plant, erect; leaf narrow, lamina green, slightly wavy along the margin; fruit long (20-25 cm)×3-3.5 cm. dark purple, calyx green. Slightly tapering at the near distal end.	
6. Identifiable and distinguishable morphological characteristics.	(1) Habit of growth	Erect
	(2) Leaves	Lamina narrow, green margin wavy.
	(3) Fruit	Deep purple, tapering at the near distal end.

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1. Crop	Brinjal (Round)	
2. Variety	Azad B 1 Round	
3. Parentage	Banarsi Giant Round × 7103	
4. Breeder/Institute responsible for maintaining the breeder's stock.	Economic Botanist (Vegetables), C.S.A. University of Agri. & Tech., Kanpur.	
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	Plant dwarf (60-70 cm), stout, erect, compact, leaf lamina green, wide; fruit smooth, round, (P:E 11-12 cm: 10-11 cm) shinning purple, calyx green.	
	Average fruit weight	160-180 g.
	Mean fruit number per plant	10-12
6. Identifiable and distinguishable morphological characteristics.	(1) Habit of growth	Erect & Compact
	(2) Leaves	Lamina wide, green & thick
	(3) Fruit	Calyx green, deep purple round, smooth Ratio of axi narrow.

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1. Crop	French bean
2. Variety	Pant Anupama (UPF-191)
3. Parentage	Selected from germplasm
4. Breeder/Institute responsible for maintaining the breeder's stock	Vegetable Breeder, G.B.P.A.U. & T. Pantnagar.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	Bush, upright plant, medium green dense foliage, pods concentrated at mid-height pods round straight, tender, non-stringy, flowering duration—50 days, first picking—65 days.
6. Identifiable and distinguishable morphological characteristics	Pods round generally straight, smooth, seeds uniformly dark brown, medium size.

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1. Crop	Peas
2. Variety	Azad P 1
3. Parentage	6416 × 6405
4. Breeder/Institute responsible for maintaining the breeder's stock	Economic Botanist (Vegetables), C.S.A. University of Agri. & Tech., Kanpur.

5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents). : Plant length (80-90 cm); foliage dark green, flowering 40-45 d. Pod smooth dark green, long (8-10 cm), narrow (1.2-1.4 cm) number of pods (30-40/plant), number of seeds (8-10/pod), very tightly filled, shelling 50-55% seed wrinkled.

Identifiable and distinguishable morphological characteristics. :
- (1) Leaf : Foliage dark green.
- (2) Fruit (pod) : Very slightly curved at the near distal end.
- (3) Seed : Wrinkled.

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1. Crop : Chilli.
2. Variety : Chanchal.
3. Parentage : Selection from local germplasm.
4. Breeder/Institute responsible for maintaining the breeder's stock. : Economic Botanist (Vegetables), C.S.A. University of Agri. & Tech. Kanpur
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents). : Plant medium tall, perennial habit foliage dark green, fruits dark green when immature and shinning red at maturity, 25 to 30 mm long, 6-7 mm thick, Seedy, highly pungent and erect in nature suitable for kitchen gardening (It can be grown for five years).
6. Identifiable and distinguishable morphological characteristics : Dark green foliage with perennial habit, small leaves.
   (2) Fruit erect and highly pungent, de-stalk type.

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1. Crop : Paddy (Rice).
2. Variety : (BG 90-2) Sujata.
3. Parentage : Peta/TN(1)/Remadja
4. Breeder/Institute responsible for maintaining the breeder's stock. : Rajendra Agril. University, Bihar Agril. Res. Institute, Patna.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents). : Semi-tall plant with erect leaves. The culm is stiff. Leaves are dark green. The variety is insensitive to photo-period and matures in 130-135 days.

   BG 90-2 yielded better than check in the uniform variety trial from 1977 to 1980. This variety can be grown in some command area of Bihar as substitute to Sita/Jaya.
6. Identifiable and distinguishable morphological characteristics. :
   - (1) Plant height : 100-110 cms with light green nodes and inter-nodes.
   - (2) Long bold : grains having mean length of 6.9 mm and breadth 2.5 mm.
   - (3) Husk shinning straw colour.

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1. Crop : Paddy (Rice).
2. Variety : Radha (BR-51-91-6).
3. Parentage : IR 20/IR5-114-3.
4. Breeder/Institute responsible for maintaining the breeder's stock. : Rajendra Agricultural University, Bihar Agril. Res. Institute, Mithapur, Patna.
5. Description of the variety/hybrid (in case of hybrid, please give separate description of the parents). : Semi-tall (115-120 cm) with erect stiff culm. The variety has good tillering ability. Leaves are erect and dark green. The variety is insensitive to photoperiod and matures in 140-145 days. It is non-lodging and fertilizer responsive type.

   BR 51-91-6 yielded better than check in uniform variety trial from 1977 to 1983 and in cultivators plot from 1981 to 1983.

   This variety can be grown in all parts of Bihar as substitute to Sita/Jaya.
6. Identifiable and distinguishable morphological characteristics. :
   - (1) Plant height 115-120 cm with light green nodes and internodes.
   - (2) Awnless spikelets with straw colour hull and white kernal. Medium slender grain having mean length and breadth of 5.95 mm and 2.60 mm respectively.
   - (3) Husk dull straw colour.

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1. Crop : Paddy (Rice).
2. Variety : Br-34 (2206 B).
3. Parentage : Pure line selection from Dolangi rice of Monghyr district of Bihar.
4. Breeder/Institute responsible for maintaining the breeder's stock. : Rajendra Agricultural University, Bihar Agril. Res. Institute, Patna.

5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	Tall stature, lodging tendency at maturity, penicle ex-ertion is completed and tillering ability is good. The plant type is open and sensitive to photoperiod. It flowers in the 2nd week of October. Br 34 (2206B) was tested in variety trial from 1956 to 1958 and the performance of this variety was consistant. It also performed well in farmers field from 1955 to 1957. This culture is suitable for transplanted condition. It is low input variety and responsive to low doses of fertilizers i.e. 40 N, 40 P_3O_5, 20 K_2O kg/ha.
6. Identifiable and distinguishable morphological characteristics.	(1) Plant height is 130-130 cm tall spikelets is light golden yellow with black furrows and awnless. (2) Medium slender grain having mean length and breadth of 8.8 mm and 2.6 mm respectively. Kernel is dirty white in colour.

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1. Crop	Paddy (Rice)
2. Variety	Culture-1 (CR 237-1) (Kalinga-III)
3. Parentage	AC 540 × Ratna
4. Breeder/Institute responsible for maintaining the breeder's stock.	Central Rice Research Institute, Cuttack-753 006.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	Medium tall variety, plant parts green, grains long slender, extra early-maturing (75 days).
6. Identifiable and distinguishable morphological characteristics.	Light green foliage long slender grain.

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1. Crop	Bajra
2. Variety	Gaint Bajra
3. Parentage	Evolved through a cross between Australian Bajra and local Bajra.
4. Breeder/Institute responsible for maintaining the breeder's stock.	Research Officer, Grass Breeding Scheme, Mahatma Phule Krishi Vidhapeeth, Rahuri (Ahmednagar).
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	Giant Bajra fodder is very leafy, juicy, palatable, profusely tillering. Contains 9 to 10% proteins, at boot stage. With better management fodder grows to height of 2.5 to 3.5 meter within 55 days and yields 50 tonnes green forage per hectare in first cut. Fodder is good for green feeding, dry feeding and silage making. It is liked by all kinds of livestock.
6. Identifiable and distinguishable morphological characteristics.	Significantly higher yielder in the All India tests. It contained lowest amount of harmful ingred (oxalic acid).

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1. Crop	Cotton
2. Variety	NHH 44
3. Parentage	B.N.-1 (Female) Ac-738 (Male)
4. Breeder/Institute responsible for maintaining the breeder's stock.	Cotton Research Station, Nanded, Marathawada Agril University, Parbhani.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	Plant height is 90 to 120 cms. foliage are light green, open plant type with 2-3 monopodia habit, leaves are light green, slignt hairy with nectary glands, flowers are light yellow petals with yellow anthers, matures in 150 to 160 days. non-lodging.
6. Identifiable and distinguishable morphological characteristics.	It has shown superior fibre qualities like bundle strength fineness and uniformity ratio as compared to H-4 and shown higher C.S Values. Suitable for late planting due to early and synchron flowering.

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1. Crop	Cotton
2. Variety	Rohini (NA-48)
3. Parentage	(CJ-73 × C.875 × CJ-73)
4. Breeder/Institute responsible for maintaining the breeder's stock.	Senior Cotton Breeder, Cotton Res. Station, Nanded.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	Plant height is 100-120 cms., erect in habit with 0 to 1 monopodia, sympodial habit, 5 deep lobes. Matures in 160 to 170 days. Leaves deeply secrated, flowers medium with yellow petals, anthers yellow boll size, medium & rounding to slightly tapering in shape Mean fibre length ranging between 24.00 to 25.00 mm.
6. Identifiable and distinguishable morphological characteristics.	Bracts more serrated than Eknath. Flowers small size as compared to Eknath. Suitale for rainfed cultivation (early sowing), Ginning percenatge 38.5 to 39%.

1. Crop	:	Niger
2. Variety	:	IGP-76
3. **Parentage**	:	Selection made from the population of N-12-3.
4. Breeder/Institute responsible for maintaining the breeder's stock.	:	Jr. Geneticist, AICORPO (Niger) College of Agriculture, Dhule.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents).	:	It is 170 cm tall, fruiting branches start from 4th to 6th node of main stem. The foliage is green and round, & coarse minute hair. The flowers are bright canary yellow colour. It flowers in 70 to 75 days and matures in 100 to 110 days. 35 to 40 capitula/plant with 5 to 27 seeds/capitulum. Seeds are black. It has 40% oil in the seed. 1000 seed weight is 5 gm.
6. Identifiable and distinguishable morphological characteristics.	:	(i) Average number of days required for flowering : 70 to 75 (ii) Foliage : Green and rough due to the coarse minute hair. (iii) Flowers are bright canary yellow in colour.

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1. Crop	:	Wal (*Dolichos Lalab, Lin*)
2. Variety	:	Wal Konkan-1
3. Parentage	:	Wal 2-K2 × Wal 125-36
4. Breeder/Institute responsible for maintaining the breeder's stock	:	Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratangiri.
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	:	Plant height is 40 to 45 cms Bunchy dark, green with smooth leaves with long tendrilles. Seeds are bold with brown coat colour flowers in 55 to 60 days and matures in 110 to 115 days.
6. Identifiable and distinguishable morphological characteristics.	:	The protein percentage is 14.68%. Higher yielding than existing variety 2-K-2 and better test.

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1. Crop	:	Cotton
2. Variety	:	Karunganni 9 (K-9)
3. Parentage	:	Hybrid derivative of a cross between H4 and 0896.
4. Breeder/Institue responsible for maintaining the breeder's stock.	:	Cotton & Millet experiment Station, Kovilpatti-627701, Tirunelveli District (TN)
5. Description of variety/hybrid (in case of hybrid, please give separate description of the parents)		
(a) Distinguishing morphological characters :—		
(1) Plant height	:	Tall with 2 to 3 monopodial branches with narrow to medium lobed leaves.
(2) Stem	:	Green, slightly hairy.
(3) Leaf	:	Green, five lobed with shallow to narrow sinunser.
(4) Leaf hairiness	:	Slightly hairy.
(5) Leaf and extra floral	:	Present
(6) Corolla colour	:	Yellow (non-pigmented or scarcely pigmented stigma).
(7) Petal, spot	:	Present
(8) Pollen colour	:	Yellow
(b) Earliness in crop maturity :		
(1) Flowering	:	No. of days for completion of 50% population from the date of sowing 79 days.
(2) Boll opening	:	No. of days from completion of 50% population from date of sowing 122 days.
(3) Boll size	:	Medium sized, sparsely pitted with 3 locules.
(4) Crop maturity in days (seed to seed)	:	145-150 days.
6. Identifiable and distinguishable morphological characteristics.	:	(1) Small flowers and Brackets. (2) Small flowers and brackers are 3/4 of the petal length (i) Narrow to medium sized leaf. (ii) Green stem.

Minutes of the 2nd Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 24-1-1985 under the Chairmanship of Dy. Director General (CS), ICAR, Krishi Bhavan, New Delhi

1. The list of the participants is as per Annexure I

2. The Chairman welcomed the members and enunciated that Committee is fully seized of its responsibilities and accordingly, committed to discharge its assigned role in such a way that the good varieties are helped in all possible ways to spread quickly while inferior varieties are prevented to reach to the farmers. To meet the enshrined role, the frequency of the meetings has been increased. The steps recently taken would insulate the system of release and notification from delay.

3. The Chairman also enumerated the advantages of testing the newly developed cultivars simultaneously into the All-India Coordinated Trials. He emphasised that the wide expostureof the newly developed genotypes would give a chance to the various agricultural agencies to find out whether a particular genotype is also suitable for the other areas of the country specially of the same eco-system for which it has been bred. The information called out under coordinated trials would prove very advantageous to the farmers of other States.

4. The Chairman also invited the discussion on the present status of minikit trials and their contribution for correct evaluation of the varieties for release. He mentioned that the introduction of the minikit trials was for a popularisation work and was intended to know the reaction of the farmers and behaviour of the variety on farmers' fields. Because the data generated on research station sometimes it may not match with the results obtained on farmers' field due to the different conditions exist at these places. Specially on research fields the conditions are ideal and favourable which help variety to express its potential in a fullest way while at farmers' fields where the variety has to find its final place, the conditions are quite different and hence the trial of the variety in farmers' fields is imperative to reach at correct conclusion about its merits and demerits.

5. Unfortunately, some lacunae have crept in the system which have plague the whole system of the minikit trials. He suggested that the Committee might consider whether the minikit trails could be substituted by some other procedure specially under the umbrella of transfer of technology, presently being run by ICAR.

6. Dr. Ram, Director, Agriculture, Bihar, Director, Maharashtra State Seed Certification Agency and Additional Director of Agriculture. Tamilnadu were of the opinion that it is a fact that the present system of minikit trials is not working satisfactorily. However they were of the opinion that it would not be proper to dispense with the system in the interest of farmers. Because the minikit trials do not only generate the data for evaluation of the variety but also considerably help to popularise the variety among the farmers. Therefore, while considering the change in the system this fact may also be kept in mind.

7. The Director (Inputs) mentioned that the Central Sub-Committee on Release of varieties in its 5th Meeting held on 20-6-72 recommended the following about the minikit trials:

(i) Only those varieties which are recommended in the All India Workshops should be placed before the Central Varieties Release Sub-Committee for consideration.

(ii) The Crops Division may write to the State-Agriculture Departments about the quantity of seeds of particular variety available for district trials and the results will be sent by the State Governments. Trials may be conducted by the Extension Agency of the State Department of Agriculture.

(iii) Farmers and extension workers should be taken into confidence for evaluation of varieties and it should be left to them to find out their suitability for a particular area before they are released.

(iv) The duration of varieties which have been recommended by the Sub-Committee for farmers' evaluation in the district trials should be limited to one year only.

Unfortunately, the flow of the data generated during minikit trials is not very high and sometime results are received quite late and thus system is not working to the desired level. Therefore, the evaluation of the present system and identification of the weak areas is necessary.

8. After detailed discussion on the subject, the Committee decided that a small Committee might be constituted to consider the present status of the minikit trails and to identify the areas where improvement could be done. The Chairman suggested that the Committee might include few Directors of Agriculture from major States and officers of the Department of Agriculture.

9. The Central Sub-Committee on Crop Standards, Notification and Release of Varieties also recommended the following for bringing improvement in

the production of breeder seeds, scientific certification and better evaluation of the proposal at the time of release:

(i) The production of breeder seeds of highest quality should be given top-most priority. The highest genetic purity maintained at the time of production of breeder seeds would remove the opportunity of extensive seggregation in subsequent generation;

(ii) Monitoring of the breeder seeds and its supply in a prescribed procedure should be ensured;

(iii) During the workshop, the varieties proposed for release should also be evaluated against the already released varieties. This will help in better evaluation of the new varieties. A comparative statement should also be prepared for this purpose.

(iv) The sponsoring authorities should signify in detail the identifiable and distinguishable morphological characters of the variety proposed for release and notification so that certification agencies might not feel any difficulty during certification;

(v) Instances of the same name for different varieties and different names for the same variety are not uncommon. Therefore, Committee recommended that system of naming of the varieties should be specified and operated at National level to overcome this problem.

(vi) The minimum quantity of breeder seeds to be produced before proposing the varieties for release and notification should be specified cropwise.

(vii) The varieties released in recent past should also be used as a check to evaluate the new varieties under trials.

10. While discussing the release of Toria variety PT-303, Dr. Yadav, Project Director (Oilseeds) mentioned that in case of Toria crop, the diseases like alternaria and powdery mildew do not have any economic importance and resistance/tolerance to these diseases has no relevance for considering this variety for release. However, phyllody disease is a severe problem in rape seed and mustard crops. After this the regular agenda was taken for discussion and the position in respect of each item is indicated below:

Item No. 1 : Confirmation of the Minutes of the Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 25th and 26th September, 1984.

Item No. 2 : Review of action taken on Minutes of the 1st Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

The position indicated in the agenda notes as noted by the sub-committee/participants.

Item No. 3 : Consideration of the proposals for release

13 proposals of various varieties of different crops were evaluated for release. The observations of the Central Sub-Committee on Crop Standard, Notification and Release of Varieties on each proposal is indicated as under:—

Details of the varieties recommended for release and notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Linseed	Jawahar Linseed-23 (SPS 23-10)	(i) Recommended for release for cultivation in Madhya Pradesh, Uttar Pradesh, Maharashtra, Orissa and Karnataka. (ii) Recommended for notification for entire country.
2.	Linseed	Garima (LHCK-39)	(i) Recommended for release for general cultivation in Linseed growing areas of Uttar Pradesh (excluding Bundelkhand), Bihar, West Bengal and Assam states under irrigated condition. (ii) Recommended for notification for entire country.
3.	Linseed	Shubhra (LHCK-21)	(i) Recommended for release for general cultivation in entire linseed growing areas of Uttar Pradesh (excluding Bundelkhand), Bihar, West Bengal and Assam States under both irrigated and rainfed conditions. (ii) Recommended for notification for entire country.
4.	Linseed	Sweta (LHCK-131)	(i) Recommended for release for general cultivation in linseed growing areas of Uttar Pradesh (excluding Bundelkhand), Bihar, West Bengal and Assam States. (ii) Recommended for notification for entire country.

1	2	3	4
5.	Ragi	Ratnagiri (PR 1044)	(i) Recommended for release for cultivation in the AP State both as rainfed as well as irrigated crop to replace the existing varieties in places wherever a variety of medium duration (110-115 days) are presently grown. It is suitable for the districts of Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Chittoor, Anantapur, Kurnool, Mahaboobnagar etc. wherever the crop is extensively in cultivation. (ii) Recommended for notification for entire country.
6.	Wheat	HUW-206	(i) Recommended for release for cultivation in North Eastern Plains Zone. (ii) Recommended for notification for entire country.
7.	Wheat	WH-291	(i) Recommended for release under late sown, high fertility irrigated conditions of Haryana and parts of Rajasthan and Gujarat. (ii) Recommended for notification for entire country.
8.	Barnyard Millets . . .	RAU-3	(i) Recommended for release for cultivation in whole Bihar. (ii) Recommended for notification for entire country.

The details of the important features of the above varieties are given in Annexure II.

Details of the varieties wherein sponsoring authorities have been advised to re-submit the proposal with additional information as indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Sorghum	SU-45	The sponsoring authority might re-submit the proposal alongwith the comperative statement evaluating the varieties recommended for release in the same Workshop against each other namely; Sel-276, PC-9, SU-45, PC-23 and S-171.
2.	Toria . .	PT-303	The data for one more year might be generated at farmers field. The proposal may be re-submitted alongwith the data generated.
3.	Wheat	HUW-213	Do.

Details of the varieties which are not recommended for release

Sl. No.	Crop	Variety	Remarks
1.	Pea (Veg.)	Pant Uphar (IP-3)	The variety is reported to be susceptible to Powdery Mildew disease and is not found superior to the existing varieties.
2.	Barnyard Millet	RAU-2	RAU-2 is not found superior to RAU-3 which has been recommended for release for cultivation in whole of Bihar in the same Meeting.

Item No. 4 and 6 : Consideration of the proposals for notification under Section 5 of the Seeds Act.

35 proposals of various varieties of different crops were evaluated for Notification. The observations of the Central Sub-Committee on Crop Standard, Notification and Release of Varieties on each proposal is enumerated as under:

Details of the varieties recommended for notification under Section 5 of the seeds Act

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Red gram (Arhar)	Upas-120	Recommended for notification for entire country
2.	Barley	Lakhan (K-226)	-Do-
3.	Barley	Jagrati	-Do-
4.	Bajra	HHB-45	-Do-
5.	Cowpea	S-288	Do
6.	Chilly	K-2	-Do-
7.	Cotton	Godawari (NHH-1)	-Do-
8.	Groundnut	Chitra	-Do-
9.	Groundnut	UF-70-103	(i) Recommended for notification for entire country. (ii) The sponsoring authority would indicate the original number of the variety.
10.	Sorghum	Varsha	Recommended for notification for entire country.
11.	Sorghum	SPV-297	-Do-
12.	Sorghum	SPV-504 (RSV-9R) Swati	-Do- -Do-
13.	Maize	Farm Sameri	-Do-
14.	Paddy	Usar-1	-Do-
15.	Chilli	MDU-1	-Do-
16.	Brinjal	CO. 1	-Do-
17.	Bhindi	MDU. 1	-Do-
18.	Tapioca	CO. 2	-Do-
19.	Tomato	PKM-1	-Do-
20.	Red gram	SA-1	-Do-
21.	Panaivaragu	CO. 2	-Do-
22.	Ribbed gourd	CO. 2	-Do-
23.	Mochai (Lab-lah)	CO. 2	-Do-
24.	Bitter gourd	MDU-1	-Do-
25.	Ragi	Paiyur-1	-Do-

The details of the Important features of the above varieties are given in Annexure III.

Details of the varieties wherein sponsoring authorities have been advised to resubmit the proposal alongwith information indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Barnyard Millet/Sawan	Anurag	The sponsoring authority may submit the pedigree of the variety in detail.
2.	Paddy	Ambika	(i) The proposal might be reput up alongwith the data of All India Coordinated Project. (ii) The Project Director might be requested to indicate his opinion based on the performance of the variety in coordinated trials.

1	2	3	4
3.	Red gram	Co. 5	The proposal might be reput up alongwith the data of the All India Coordinated Project.
4.	Cowpea	Paiyur-1	-Do-
5.	Groundnut	Co 2	-Do-
6.	Caster.	TMV 5	-Do-

Details of the varieties rejected for Notification

Sl. No.	Crop	Variety	Remarks
1.	Paddy	Madhuri	The variety has not performed well under coordinated trials and reported to be susceptible to various diseases and pests.
2.	Wheat	K-7105	The variety is reported not to be very popular among the farmers.
3.	Wheat	K-72	-Do-
4.	Wheat	K-78	-Do-

Item No. 5 : The following varieties which have already been notified for various States have also been recommended forentire country:

Sl. No.	Crop	Variety
1.	Paddy	Ponni (Mahsuri)
2.	Ragi	Indaf-5
3.	Ground nut	TMV-7
4.	Cotton	Laxmi
5.	Beet Root	Detriot Dark Red Crimson Globe
6.	Bhindi	Pusa Sawani
7.	Cabbage	Pride of India
8.	Cabbage	Golden acre
9.	Cabbage	Pusa drum head
10.	Carrot	Nantese
11.	Carrot	Early Nantese
12.	Tomato	Pusa Ruby
13.	Tomato	Pusa Early Dwarf
14.	Cowpea	Pusa 152
15.	Brinjal	Pusa Purple long
16.	Brinjal	Pusa Purple Round

The meeting ended with a vote of thanks of the Chair.

ANNEXURE

List of the participants who have attended the 2nd Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 24th January, 1985 under the Chairmanship of Dy. Director General (CS), ICAR in Krishi Bhavan, New Delhi

No.	Participant	Role
1.	Dr. M. V. Rao, Dy. Director General (CS) ICAR, Krishi Bhavan, New Delhi.	*Chairman*
2.	Dr. P.K. Agrawal, Head, Divn. of Seed Sciences and Tech. IARI, Pusa, New Delhi-110012.	*Member*
3.	Shri B.N. Sehgal, Chief Seed Certification Officer, Delhi Administration, Delhi.	*Member*
4.	Shri H.L. Trivedi, Director, Gujarat State Seed Certification Agency, Ahmedabad (Gujarat).	*Member*
5.	Shri Hari Krishna, Director, UP State Seed Certification Agency, Lucknow (UP).	*Member*
6.	Shri S.K. Gupta, Managing Director, MP State Seed Certification Agency, Bhopal (MP).	*Member*
7.	Dr. D.N. Ram, Director of Agriculture, Bihar, Patna.	*Member*
8.	Shri K. Malaisamy, IAS Director of Agriculture, Tamilnadu.	*Member*
9.	Sh.H. Narsimha Murthy, Director, Seed Certification, Karnataka.	*Member*
10.	Sh. J.N. Johri, Director, Rajasthan State Seed Certification Agency, Jaipur (Raj.).	*Member*
11.	Sh. P.S. Chaudhary, Director, Maharashtra State Seed Certification Agency, Pune (Maharashtra)	*Member*
12.	Shri B.S. Gill Director, Punjab State Seed Certification Authority, Chandigarh.	*Member*
13.	Sh. S. Vankat Reddy, Director, AP State Seed Certification Agency, Hyderabad-29	*Member*
14.	Sh. K.C. Katyal, CPD, National Seeds Corporation Ltd., Beej Bhavan, Pusa, New Delhi.	*Member*
15.	Sh. B.P. Sikder, Director (Inputs) Ministry of Agri. & Rural Development, New Delhi.	*Member-Secretary*

Others

16. Sh. P.I. Anjaria,
Jt. Director of Agriculture (Pulse),
Gujarat State.

17. Sh. J.P. Tondon,
Project Director (Wheat),
IARI, New Delhi.

18. Sh. S.S. Misra,
Joint Director of Agriculture,
Madhya Pradesh, Bhopal.

19. Sh. R.D. Singh,
Deputy Director,
Seed Certification, Patna.

20. Sh. N. Pinagapany,
Addl. Director (Seeds),
Tamilnadu.

21. Sh. K.G. Roy,
Chief Seed Certification Officer,
West Bengal.

22. Sh. K.S. Tambolkar,
Tech. Officer (II),
Directorate of Agriculture,
Pune (Maharashtra).

23. Sh. T.P. Yadava,
Project Director, Oil Seed Research,
Hyderabad.

24. Sh. Munshi Singh,
Head (Genetics)
IARI, New Delhi.

25. Sh. K.S. Aroro,
Joint Director Agriculture,
Haryana, Chandigarh.

26. Sh. N.S. Tunwar,
Officer on Special Duty (QC&T)
Ministry of Agri. & Rural Development,
F/118, Shastri Bhavan, New Delhi.

27. Sh. M.S. Shukla,
Dy. Seed Officer (QC),
Ministry of Agri. & Rural Development,
F/218, Shastri Bhavan, New Delhi.

ANNEXURE II

The important features of the varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 2nd Meeting held on 24th January, 1985

1. Name of the crop : Linseed

Name of the Variety : Jawahar Linseed-23 (SPS 23-10)

Parentage with details of its pedigree : It is a selection from a cross between EC 9832 × Hira, following pedigree method.

Sponsored by : Deptt. of Plant Breeding & Genetics, J.N. Krishi Vishwa Vidyalaya, Jabalpur-482004 (MP)

Description of variety :

(a) Plant height : 55-65 cm

(b) Distinguishing morphological characters : Stem green in colour without anthocynin pigmentation, leaves leneeolate narrow to broad, succulant with thin cuticle, 4-5 branches arising from the base. Plants compact type. Flowers medium in size and white in colour with slight bluish tinge. Flowering and maturity synchronous.

(c) Maturity (Range in number of days) : 120-130 days

(d) Reaction of major diseases under field conditions. : Resistant to all the three major diseases, *i.e.* wilt, rust and powdery mildew

(e) Agronomic features (eg., resistance to lodging, frost and shattering, fertilizer responsiveness, suitability for early or late sown conditions, seed rate etc. :

(i) Resistant to lodging, frost and shattering.
(ii) Response to fertilizer: Rainfed-30N + 15P kg/ha. Irrigated-60 N +30 P kg/ha.
(iii) Suitable sowing time-15-30 October. Yield reduces gradually if sowing is delayed after October.
(iv) Seed rate-25 kg/ha

(f) Quantity of produce (grain/forage/fibre including nutritive value where relevant) : Oil content : 44 %.

Yield : 7.23 qtls. to 8.14 qtls./ha

Agency responsible for maintaining breeder's stocks. : Department of Plant Breeding & Genetics, J.N. Krishi Vishwa Vidyalaya Jabalpur (MP).

2. Name of the Crop : Linseed

Name of the variety : Garima (LHCK-39)

Sponsored by : Scientist Oilseeds Breedings, Chandra Shekhar Azad University of Agri. & Tech., Kanpur.

Parentage with details of its pedigree : LHCK-39 is a selection from the cross T 126 × Neelum.

Description of the Variety :

(a) Plant height : 50-60 cm.

(b) Distinguishing morphological characters : Plant medium dwarf, erect, slightly open at top, good primary branching generally attaining the height of mother shoot, having large fruiting zone; secondary branches making the top canopy open at maturity, flowers blue coloured, medium in size.

(c) Maturity : 125—135 days

(d) Reaction to major diseases under field condition :

(i) Resistant to linseed rust.
(ii) Moderately resistant to powdery mildew.
(iii) Moderately resistant to black tip (Alternaria blight)
(iv) Moderately resistant to wilt.

(e) Reaction to major pests in field condition : Being early, escapes linseed budfly (*D. lini*) attack.

(f) Agronomic features (*e.g.* resistance to lodging drought, frost and shattering; fertilizer responsiveness; and suitability for early or late sown conditions, seed rate etc.) :
- (i) Being erect and medium dwarf in height, it resists lodging.
- (ii) Withstands frost well.
- (iii) Tolerant to moisture stress as well.
- (iv) Capsules are non-dehiscent.
- (v) Linear response to Nitrogen application upto 90 kg N/ha under irrigated condition where as under rainfed condition does the best at 40 kg N/ha.
- (vi)' Performs well even in delayed sowing up to one month beyond its best sowing time i.e. October 20.
- (vii) seed rate-30 kg/ha.

Yield : 12.23 to 14.91 qtls./ha.

Agency responsible for maintaining Breeder's seed : Chandra Shekhar Azad University of Agri. & Tech., Kanpur.

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3. Name of the Crop : Linseed

Name of the Variety : Shubhra (LHCK-21)

Sponsored by : Scientist Oilseeds Breeding, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

Parentage with details of its pedigree. : LHCK-21 is a derivative of the cross between Mukta and K-2.

Description of the variety .

(a) Plant height : 45-65 cm.

(b) Distinguishing morphological characters. : Plants erect, compact with drooping top before flowering; early growth fast; good primary branching, generally attaining the height of mother shoot making uniform top; capsule medium bold; flowers crimpled white with pale blue tinge.

(c) Maturity (days) : 125-135 days

(d) Reaction to major diseases under field conditions : :
- (1) Resistant to rust.
- (2) Moderately resistant to black tip (Alternaria blight)
- (3) Moderately susceptible to wilt.

(e) Reaction to major pests in field conditions : Being early in flowering and maturity it escapes linseed bud fly attack.

(f) Agronomic features, e.g. resistance to lodging, frost and shattering, fertilizer responsiveness, and suitability for early or late sown conditions, seed rate etc. :
- (1) Being erect and compact, it resists lodging.
- (2) Withstands frost well.
- (3) Withstands moisture stress also.
- (4) Capsules are non-dehiscent.
- (5) Responds well in linear order upto 90 kg. N/ ha and up to 40 Kg. N/ha under rainfed condition.
- (6) Also suitable in delayed sowings.

(g) Quality of produce of grain, fruit, forage/fibre including nutritive/industrial value etc. :

(1) (A) Oil content : 44.47%
(B) Oil content (over dried basis) : 50.1%
(2) Protein content : 12.8%
(3) Iodine value : 194.3
(4) Linolenic acid : 60.3

It has excellent oil quality from paints and varnish utility point of view. There is no variety with so high oil quality on list in the zone.

Yield : 11.57 to 13.85 qtls. /ha.

Agency responsible for maintaining Breeder's seed (Quantity of Breeder seed, stock in Hand) : Chandra Shekhar Azad University of Agri. & Tech., Kanpur. Breeder seed 0.85 quintal. Truthful labelled seed 2.50 quintal.

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4. Name of the Crop : Linseed

Name of the variety : Sweta (LHCK-131)

Sponsored by : Scientist Oilseeds Breeding, CS Azad University of Agri. & Tech., Kanpur.

Parentage with details of its pedigree : : LHCK-131 is a pedigree selection from the cross between Mukta and T 1206.

Description of the variety:

(a) Plant height : 45-65 cm

(b) Distinguishing morphological characters : : Plant open with more or less erect top in early stage; leaves narrow primary branches developing with wide angle, normally attain the height of mother shoot; flowers open, white in colour and medium in size.

(c) Maturity (range in number of days) : 125-140 days

(d) Reaction to major diseases under field conditions.	(1) Resistant to linseed rust. (2) Moderately resistant to powdery mildew. (3) Moderately resistant to black tip (Alternaria blight) (4) Moderately susceptible to wilt.
(e) Reaction to major pests in field conditions.	No major pest in the zone.
(f) Agronomic features (e.g. resistance to lodging, drought frost and shattering, fertilizer responsiveness; and suitability for early or late sown conditions, seed rate etc.)	(1) Due to stiffness in stem it resists lodging. (2) Resistant to frost. (3) Capsules are non-dehiscent. (4) Responds well to medium fertility i.e. 40 Kg. N/ha under rainfed conditions. (5) Performs best when sown by end of October. (6) Seed rate 30 kg/ha
(g) Quality of produce of grain, fruit forage/fibre including nutritive/industrial value where relevant	(1) Oil content : 43.7% (2) Protein content : 11.9% (3) Iodine value : 173.9 (4) Linolenic acid : 50.0
Yield	8.83 to 12.86 qtls./ha
Agency responsible for maintaining Breeder's seed (Quantity of breeder seed stock in hand)	Chandra Shekhar Azad University of Agri. & Tech., Kanpur. (1) Breeder seed 0.50 qtl. (2) Truthful labelled seed 1.50 qtl.

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5. Name of the Crop	Ragi
Name of the Variety	Ratnagiri (PR 1044)
Sponsored by	Senior Scientists (Millets) Regional Agricultural Research Station, Palem (Mahaboobnagar Dist.)
Parentage with details of its pedigree	It is a pure line selection from local metta chodi variety of Raghavapuram Chintalapudi (Taluk), West Godavari Distict, Andhra Pradesh. It was selected under acquisition Number PM 629.
(a) *Description of the Variety* :	
Plant height	90 cm
No. of tillers/plant	2.5 Nos.
Panicle shape	In curved
Days to 50% flowering	78-80
Days to maturity	110-113
Plant Pigmentation	Green throughout
No. of fingers/main head	6-7 Nos.
Length of main earhead	8.2 cm
Density of panicle	Highly compact grain packing
Seed colour	Orange brown
Weight of dry earhead	7.433 gms.
Grain weight/earhead	6.166 gms.
No. of grains/earhead	2143
weight of single grain	0.00287 gms.
1000 grain weight	2.8766 gms.
Threshability	82.95%
(b) Distinguishing morphological characters	The plant is green throughout with medium big in curved earheads. All the plant parts such as leaf sheath, leaf axil, nodal band internodes, glume and leaf midrib colour is green.
(c) Maturity	110-113 days (seed to seed)
(d) Reaction to major diseases	Resistant to blast disease under field conditions.
(e) Reaction to major pests	
(i) In the field	Nil
(ii) In storage	No stored product pests, provided the grain is thoroughly dried before storing.
(f) Agronomic features	(i) Average yield : 30.96 Q/ha. (ii) Responds to fertilizers. (iii) Drought tolerant (iv) Uniform maturity

Quality of produce Nutritive value : It contains high percentage of proteins. The particulars are furnished below:

Protein : 14.43 g/100 g

Ash : 2.48 g/100 g

Calcium : 561.1 mg/100gm

Iron : 4.75 mg/100 g

Niacin : 0.43 mg/100 g

Agency responsible for maintaining breeder's stock : Agricultural Research Station, Peddapuram 533 437, East Godavari District Andhra Pradesh.

6. Name of the Crop : Wheat

Name of the variety : HUW-206 (Malaviya Wheat-206)

Sponsored by : Deptt. of Genetics and Plant Breeding Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221 005.

Parentage and breeding method used : (Kavkaz × Buho) (Kal × Bb)
(VEERY SELECTION)
Pedigree method

Description of the variety:

(i) Production conditions under which to be grown : Timely sown, medium to high fertility irrigated conditions.

(ii) Special features of the variety : Single dwarf (105-110 cm), stiff straw, medium to medium late in maturity, normal broad shining type green leaves. Excellent type of foliage. No problem for foliar diseases, very clean leaves from top to bottom and remain green till maturity. Very long, compact, white and awned spike having more number of grains per spike.

HUW-206 showed higher degree of resistance for *leaf rust, stem rust* and *leaf blight* as compared to all the check varieties (Sonalika, HP 1102, HUW-12 and HUW-55). HUW-206 has also been found *free from loose smut* under *artificial testing*. This variety has also showed very less infection of kernel bunt under artificial conditions as compared to other check varieties.

Yield : 27 to 35 qtls. /ha.

7. Name of the Crop : Wheat

Name of the variety : WH-291

Sponsored by Haryana Agricultural University, Hissar.

Parentage with details of its pedigree : HD 1925 × HD 832-23584

Description of the variety:

(1) Plant height : About 112 cm

(2) Distinguishing morphological characters : WH 291 is a double dwarf variety which possesses good tillering capacity. It bears compact spikes with white and smooth glumes. Although this variety has smaller grain size than Sonalika, this is compensated with higher effective tillering combined with more number of grains/spike than the latter.

(3) Days to maturity : About 122 days.

(4) Reaction to major disease : During last 5 years in Haryana and in other States this Variety showed tracet of brown rust as compared to 80s of brown rust in Sonalika. It has showns a maximum infection of 20s yellow rust (C.I. 4.9) as compared to 20s (C.I. 10 0) on HD 2285 and 60s in Sonalika. Regarding Karnal bunt status this variety has similar reaction to karnal bunt as that of Sonalika.

(5) Reaction of pests : No complaint

(6) Agronomic features : (a) Suitability :

This variety is suitable for late (sown after 25th of November), high fertility and irrigated conditions. It is fairly resistant to lodging and shattering.

(b) Seed rate : 120 kg/ha.

Yield : 26-32/qtls/ha.

Agency responsible for maintaining breeder seed : Deptt. of Plant Breeding, Haryana Agricultural University, Hissar.

8. Name of the Crop : Barnyard millet or Sawan

Name of the variety : RAU-3

Sponsored by : IDRO-Minor Millets Improvement Project R.A.U., Dholi (Musaffarpur)

Parentage : Pure line selection

Description of the variety : (1) Days to 50% flowering : 45

(2) Days to maturity : 81

(3) Plant height : 108

(4) Basal tiller (No/plant) : 2 to 3

ANNEXURE III

Important features of the varieties recommended for Notification in the 2nd Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1.	Crop	Redgram (*Arhar*)
	Variety	Upas-120
	Parentage	P 4758
	Breeder/Institute responsible for maintaining breeder's seed stock	GB Pant University of Agri. & Tech., Pantnagar-263 145, Nainital, UP.
	Description of the variety	It is an extra early maturing variety (Avg., 128 days, range 111-151 days). Plants are medium tall, open & semi spreading type. Flowering starts in 71 days (63-77 days range) and 75% flowering is over in next 9 days. It flowers vary profusely and normally the tips do not bear the pods. Standard petal of the flower is yellow with fine red streaks on it. Seeds are smaller (756 gm/1000 seeds) and light brown in colour. It is suitable for double cropping with normal sown wheat. It is most synchronous in maturity.
	Two identifiable and distinguishable morphological characteristics	(1) The tips (4-8 cm) of branches do not bear pods. (2) Synchronous in maturity
	Yield	
	Commercial product	11.60 q/ha. average
	Seed	10·00 q/ha. approx.

2.	Crop	Barley
	Variety	Lakhan (K 226)
	Parentage	K 71 × IB 226
	Breeder/Institute responsible for maintaining breeder stock	Barley breeder, C.S. Azad University of Agriculture & Technology, Kanpur-208 002.
	Description of the variety	Plant semi erect medium tall (75-85 cm), good tillering leaf medium broad, green semi-drooping, spike 6-rowed, glumes hairy with short hairs, rachis non-fragile, threshibility easy, non-shattering, maturity 120-125 days seed medium bold (43-45 g/1000 grain weight) hulled, Protein content 12-14%, insoluble carbohydrates 6·89% predicted extract value 74.59% and diastatic power 950 L.
	Two identifiable and distinguishable morphological characteristics	Ear medium long, midlax awns, long serate semi-spreading at top. Seed semiuniform well developed medium bold light blue in colour.
	Yield	
	(a) Commercial product	25-32 Q/ha.
	(b) Seed	25-32 Q/ha.

3.	Crop	Barley
	Name of the variety	Jagrati
	Parentage	K 138 × P 403
	Breeder/Institute responsible for maintaining breeder stock	Barley Breeder, C.S. Azad University of Agriculture & Technology, Kanpur 208 002.
	Description of the variety	Plant semi erect medium tall (79 to 87 cm) with good tillering, leaf medium, broad semi-drooping at maturity, spike 6-rowed awned glumes hairy, rachis non fragil threshibility easy, non-shattering, maturity 121-127 days, seed med. hold (45-47 g/1000 grain weight) hulled, protein content 12-14% insoluble carbohydrate 7%, predicted extract value 73.78% and diastatic power 940 L.
	Two identifiable and distinguishable morphological characteristics	Ear mid long, mid dense awns semismooth Seed uniform medium bold and golden in colour.
	Yield	
	(a) Commercial product	35-40 Q/ha.
	(b) Seed	35-40 Q/ha.

4. Crop : Bajra

Name of the variety : HHB-45

Parentage : MS 5141 A × H-90/4-5

Breeder/Institute responsible for maintaining breeder stock : Department of Plant Breeding, H.A.U. Hissar.

Description of the variety

(1) Plant height : 220-250 cm

(2) Distinguishing morphological characters : Good tillering, thin stem, 26-30 cm long dense head, medium grain size, remain green till harvest.

(3) Maturity (range in number of days seeding to flowering, seed to seed) : Seeding to flowering 50 ± 3 days, seed to seed 82 to 85 days

(4) Reaction to major disease (in field and also under controlled condition) :

Hybrid (*MS* 5141 *A* × *H* 90/4-5)

Downy mildew	Resistant	Resistant
Smut	Susceptible	Susceptible
Ergot	Susceptible	Susceptible

Pollinator (H-90/4-5)

	Field condition	Sick Plot
Downy mildew	0	3.70
Smut	0	6.00
Ergot	0	20 00

(5) Reaction of major pests (in field conditions and in controlled conditions including pests of storage) : No Complaint

(6) Agronomic features (e.g. resistance to lodging, drought, frost and shattering, fertilizers responsiveness, suitability for early or late sown conditions seed rate etc.) : Responsible to fertilizer application, suitable both for early and late sown conditions.

(7) Quality of produce (grains, forage fibre including nutritive value where relevant) : Grain tastes better. Dry fodder remains green even at maturity.

(8) Description of parents of the variety/hybrids : The female parent, MS-5141A is an agronomical desirable and widely exploited male sterile line.

H-90/4-5, the pollinator parent possesses very high tillering capacity and is a profuse pollen producer. Its height is slightly taller than the female parent which is another desirable feature in a pollinator parent. (It possesses a typical lanceolate ear that is, the spike thickness is maximum near the middle which tapers more towards the apex than base and is a distinguishing featue of the parent.) It is highly resistant to all the major bajra diseases.

Yield :

Agency responsible for maintaining breeder's stock : Pollinator parents (H-90/4-5) HAU. Female (MS,5141A)—IARI/NSC

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5. Crop : Cowpea

Variety : S-288

Parentage : Selection-2 × Virginia

Breeder/Institute responsible for maintaining the breeder stock : University of Agricultural Sciences Bangalore/Junior Vegetable Breeder, Vegetable Research Sub Station, Ambejogai Marathwada Agril. University, Parbhani.

Description of the variety & Two identifiable and distinguishable morphological characteristics : The plant height is 63.4 cm, with Bushy habit of growth. Leaves are Broad & Light green. Flowers are white in colour. Pods are pale green in colour, thick well filled fleshy & long well thicked, non-fibrous, smooth tender surface & attractive, with 23.5 cm length. Average 25 number of pods per plant, and 7.8 grams weight. Seed colour is white. The crop duration is 90 to 100 days. It is a good vegetable pods variety early maturity, high yielding and bold seeded variety having pleasant taste while raw eating & good for cooking. It has given 30% more yield. Good for kharif as well as summer plantation.

Yield :

(a) Commercial Product : 51.52 Q/ha.

(b) Seed : 9 Q/ha.

6. Crop : Chillies

Variety : K-2

Parentage : Hybrid derivative of a cross between B 70A × Sattur Samba.

Breeder/Institute responsible for maintaining the breeder stock : Cotton and Millet Experiment Station, Kovilpatti.

Description of the variety : The plants are tall and bushy in stature. Fruits are elongated samba type. The colour of the fruit is bright scarlet red. The apex of the fruit is blunt with compressed base.

Two identifiable and distinguishable morphological characteristics : Plants Tall and bushy. Fruits longer than K-1. Scarlet red in colour, tip blunt, not curved.

Yield :

(a) Commercial Product : 2,100 Kg./ha.

(b) Seed : 750 Kg./ha.

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7. Crop : Cotton

Variety : Godavari (NHH-1)

Parentage : Buri Nectariless (Female) MCU-5 (Male)

Breeder/Institute responsible for maintaining breeders stock : Senior Cotton Breeder, Cotton Research Station, Nanded.

Description of the variety : *Rainfed crop*

Plant height : 80-100 cm.
Habit : Semi erect with 2-3 monopodia
Leaves : 3-5 lobed, broad
Petal colour : Cream
Anther colour : Yellow
Boll shape : Medium elongated & leathery

Two identifiable and distinguishable morphological characteristics : (1) Medium hairy and nectaried leaves.
(2) Cream petals with yellow anthers.

Yield :

(a) Commercial product : Lint kg/ha. —340

(b) Seed : Seed kg/ha. — 660

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8. Crop : Groundnut

Variety : Chitra

Parentage : Selection from a cross between spanish SB-1 and EC 1688

Breeder/Institute responsible for maintaining the breeder stock : Breeder Groundnut, Groundnut Research Station, Mainpuri.

Description of the Variety : Virginia type, semi-spreading in habits with profuse branching, foliage dark green, pods medium bold, distinctly reticulated, construction shallow, bi-seeded, beak not distinct, shelling 71 to 72%, 100 kernal wt. 48-52 gm. oil content 48-50%.

Two identifiable and distinguishable morphological characteristics. : (1) Semi-spreading, Virginia type, with dark green leaves.
(2) Pods biseeded and kernal rose-variegated in colour.

Yield :

(a) Commercial product : 25 Q/ha.

(b) Seed : 20 Q/ha.

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9. Crop Groundnut

Variety : UF-70-103

Parentage : Introduction from University of Florida (USA)

Breeder/Institute responsible for maintaining the breeder's stock : Senior Research Scientist (Oilseeds), Punjabrao Krishi Vidyapeeth, Akola.

Description of the variety : Plant height is 18 to 22 cms. semi spreading plant type, Dark green leaflets, pod & Kernal bolder than SB-XI.

&

Matures in 120 to 125 days. Virginia bunch habit.

Two identifiable and distinguishable morphological characteristics. Leaflet colour is dark green elliptical shape & small & narrow size. Flowers are yellow. Peg colour is purple & medium in thickness, pods are medium with 3 to 3.5 cms. kernal are medium in size, light rose in colour & two per pod & 100 kernal is about 44 gram. Oil content about 52 per cent.

Yield :

(a) Commercial product : Approximately 24 quintals per hectare.

(b) Seed :

10. Crop : Sorghum (Jowar)

Variety : Varsha

Parentage : Selection from a cross T 22 × 5742-1A.

Breeder/Institute responsible for maintaining the Breeder's stock. : Department of Plant Breeding & Genetics, C.S. Azad University of Agril. & Tech., Kanpur-2.

Description of the variety : The variety 'Varsha' possesses medium long plant (200-220 cm) and non-lodging habit. Its leaves are long and broad in size. Ear heads are large semi-compact and conical, two seeded, peduncle long and partially bent; seed medium bold, flat and creamish white, 1000 seed weight 26 gm, maturity 125-130 days.

Two identifiable and distinguishable morphological characteristics. : Ear-heads semi compact, conical with long partially bent peduncle, leaves broad green.

Yield :

(a) Commercial product :

(b) Seed : Seed 25-20 q/ha. Fodder dry 100-125 q/ha.

11. Crop : Sorghum

Variety : SPV-297

Parentage : CS-3541 × IS-3924

Breeder/Institute responsible for maintaining the Breeder's stock : Sorghum Breeder, Sorghum Research Station, Marathwada Agricultural University, Parbhani.

Description of the variety

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Two indentifiable and distinguishable morphological characteristics. : Plant height is 170 to 180 cm. Tan plant type, leaves light green, narrow upright, internodes covered by leaf sheath, ear head are semi compact and complete exsertion. Matures in 110 to 115 days/round, 100 grain weight is 3.03. Proteins 10% bread quality is acceptable to the consumers. Due to its Tan plant type and thin juicy stem, fodder quality is good, suitable for inter cropping.

Yield :

(a) Commercial product : Grain yield 37 to 40 qtls per ha.

(b) Seed : Fodder yield 95 to 100 quintals per ha.

12. Crop : Sorghum

Variety : SPV-504 (RSV-9R) Swati.

Parentage : SPV-86 × M. 35-1

Breeder/Institute responsible for maintaining breeder's stock. : Senior Sorghum Breeder, Mahatma Phule Agril. University, Rahuri.

Description of the variety

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Two identifiable and distinguishable morphological characteristics. : Plant height is 170 to 190 cm. Nontan pigment, leaf are broad and horizontal, thick & juicy stem, semi-erect, large cylindrical, medium 20-25 cms. Long ear heads. Glumes are straw coloured & short. Matures in 120 to 125 days. Grains are bold round and light creamy, good in quality, Grain quality is excellent, average stability for grain yield & good threshability suitable for Rabi sowing.

Yield :

(a) Commercial product

(b) Seed

SPV-504 has given 31% and 13% more grain yield than M 35-1 & SPV-86. Also gives 14% more fodder yield than SPV-86.

13. Crop : Maize

Variety : Farm Sameri

Parentage : The variety was selected by mass selection method from the local material (land variety).

Breeder/Institute responsible for maintaining the breeder stock. : Research Scientist (Maize), N.A.R.P. Gujarat Agril. University, Godhara, Distt. Panchamahals.

Description of the variety :
(1) Tassel colour : White
(2) Silk colour : Pale green
(3) Cob setting : On the 5th to 8th node of the plant.
(4) Plant height : 180 to 210 cm
(5) No. of Internodes of the plant : 11 to 12
(6) Grain type description : Pearlish white flint grain medium round in shape and hard in texture.
(7) Duration of crop : 90 to 110 days

Two identifiable and distinguishable morphological characteristics.
(1) Green (Pale) silked plants.
(2) White tassels open sparshly, with central spike longer as compared to side branches.

Yield :
(a) Commercial product
(b) Seed : 2000 kgs per hertare.

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14. Crop : Paddy

Variety : Usar-1

Parentage : Selection from cross Jaya × Gatu

Breeder/Institute responsible for maintaining the breeder's stock. : Department of Genetics & Plant Breeding C.S. Azad University of Agril. and Tech., Kanpur-2.

Description of the Variety : Medium maturing (128-135 days), Plant erect, semitall (80-90 cm.) good tillering grain short, bold with 2.1 L.B. ratio abdominal white present, kernal elongation is 1.7 good cooking. Protein content of the Kernal is about 9.0%.

Two identifiable and distinguishable morphological characteristics. : This variety can be identified by its semitall height with traditional talls and lesser green colour foliage with dwarfs.

Yield :
(a) Commercial product : Seed (40-45 q/ha)
(b) Seed : Do.

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15. Crop : Chillies

Variety : MDU.1

Parentage : Mutant from K-1 variety

Breeder/Institute responsible for maintaining the breeder stock : Department of Horticulture, Agriculture College and Research Institute, Madurai-625 104.

Description of the variety:

Plant Habit : The plant grows to a height of 58.6 cm (with a range of 55 to 65 cm). Compact (30.2 cm spread) with erect and determinate grown habit. The main stem ends is a terminal end producing cluster of flowers and fruits. Further growth in restricted to side branches which also end in terminal cluster of flowers.

Leaves : Dark green in colour with long petiole with size 10.0×5.0 cm.

Flowers : The flowering phase ranges from 40 to 50 days and flowers are borne in clusters 4 to 9.

Fruits : Dark green when unripe and dark shining red when ripe and pendent in position.

Maturity :
Seedlings to flowering : 50-60 days.
Seed to seed : 205 to 215 days.

Quality : Capsaicin content 0.70 mg/g of dry fruit.

Yield : 1800 Kg/ha dry chillies.

Two identifiable and distinguishable morphological characteristics : (1) Cluster bearing with 4 fruits per cluster.
(2) Short, compact plant with determinate growth.

Yield :

(a) Commercial product : 1800-2000 kg/ha.

(b) Seed :

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16. Crop : Brinjal

Variety : CO. 1.

Parentage : A selection from a type collected from Kovilpatti area of Tirunelveli Dist. in Tamilnadu.

Breeder Institute responsible for maintaining the breeder stock. : Deptt. of Olericulture, Faculty of Horticulture, Tamilnadu Agril. University, Coimbatore-3.

Description of the variety : Plant height (Cm) : 70 to 80

Stem & foliage distinct features : Stem light green colour with 7 to 10 branches, foliage light green moderately, large in size (10.2 to 12.3 cm) length.

Fruits small to medium in size, each fruit weight 60 to 70 gram. Oblong in shape, light green and soft seeded.

Seed to seed duration : 160 days

Two identifiable and distinguishable morphological characteristics. : (1) Green stem and leaves with greenish purple petiole.
(2) Light greenish fruits with white base.

Yield :

(a) Commercial product : 23,900 kg/ha.

(b) Seed : 250-300 kg./ha.

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17. Crop : *Bhindi*

Variety : MDU.1.

Parentage : Induced mutant isolated from Pusa Sawani treated with DES (0.04% DES)

Breeder/Institute responsible for maintaining the breeder's stock : Department of Horticulture, Agricultural College Research Instt., Madurai-625 104.

Description of the variety : It is a mutant of Pusa Sawani obtained by treating with 0.04% diethyl sulphonate (DES). It grows to a height of 75 cm producing on an average 10 light green fruits per plant, with a fruit length of about 20 cm. The plant is green with slight purple pigmentation and the flowers are yellow. It has a duration of 90 days from seed to seed and first picking starts on the 43rd day after sowing. On an average 15 pickings could be obtained from the crop. The fruit has light green colour. It yields on an average 9448 kg/ha as against 8415 kg in Pusa Sawani and 8242 kg in Co.1 Bhindi. The characteristics features of MDU.1 Bhindi are as follows :

S.No.	*Characters*	*MDU.1 Bhindi*
1.	Height of the Plant (cm)	75
2.	Number of nodes/plant	13
3.	Internode length (cm)	6.1
4.	Node at which first fruit is borne	4.5
5.	Days to first flowering	33
6.	Days to first picking	43
7.	Duration (days)	
	(i) Seed to fruit	43-75
	(ii) Seed to seed	90
8.	Number of fruits per plant	10
9.	Length of fruits (cm)	20
10.	Weight of single fruit	—

11. Seed weight/fruit (g)	:	3.45
12. No. of seeds/fruits	:	52
13. 1000 seed weight (g)	:	63
14. Crude fibre content (%)	:	12.3
15. Fruit colour	:	Light green
16. Vein clearing disease (infection %)	:	20.2
17. Yield of fruit (kg/ha)	:	9448
Two identifiable and distinguishable morphological characteristics	:	(1) Short plant type with determinate plant growth having shorter internodes bearing fruits in each node. (2) Long light green fruits.
Yield:		
(a) Commercial product	:	9500 kg/ha.
(b) Seed	:	

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18. Crop	:	Tapioca
Variety	:	CO.2
Parentage	:	Clonal Ballu from Tiruvarur line Department of Sericulture.
Breeder/Institute responsible for maintaining the breeder's stock	:	Faculty of Horticulture, Tamil Nadu Agrl. University, Coimbatore-3.
Description of the variety	:	This is in local selection from Tanjavur type with a crop duration of 8½ to 9 months and gives 37.5 tonnes of tubes/ha with a starch yield of 13 tonnes/ha. The tubes are rich in spunch (34.5%) and low in HCN extent (10 kg/g) and suited for consumption and industrial purposes.
Two identifiable and distinguishable morphological characteristics	:	The plants are high branching and free flowering. The florage are green with kinkosh and the emerging short will be light green. The tubers have a whitish gray skin and creamy white flesh.
Yield:		
(a) Commercial product	:	37.5 tonnes/ha.
(b) Seed	:	17.500 setts/ha.

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19. Crop	:	Tomato
Variety	:	PKM.1
Parentage	:	As induced mutant from Annanji tomato
Breeder/Institute responsible for maintaining breeder's stock	:	Horticulture Research Station, Tamil Nadu Agricultural University, Periyakulam.

Description of the variety:

Plant Characters

(1) Plant height }	:	45 cm
(2) Stature]	:	Dwarf and less spreading
(3) Leaves	:	Dark green normal with less foliage

Fruit Characters

(1) Shape	:	Flatish with 4-5 light grooves
(2) Mean wt. of single fruit	:	55.2 g.
(3) Mean length	:	3.0 cm.
(4) Mean breadth	:	4.6 cm.
(5) Colour of the unripe fruit	:	Dark green
(6) Colour of ripe fruit	:	Capsicum red with persistent green on the pedicelar end.
(7) Mean No. of locules	:	4.3
(8) Mean No. of grooves	:	5.0
(9) No. of fruits/cluster	:	4 to 6

(10)	No. of fruits/kg	20
(11)	Average No. of seeds/fruit	172
(12)	Seed to pulp ratio	1 : 135
(13)	Quantity of fruits required to produce 1 kg of seed	135 kg.
(14)	No. of fruits required to produce 1 kg of seed	2700-3000
(15)	Spacing	60 × 30 cm
		Yield Particulars
(1)	No. of fruits/plant	30
(2)	Wt. of fruits/plant	1650 g.
(3)	Mean yield Mt/ha.	32.0
(4)	Per day production	288 g.
		Duration
(1)	Sowing to 1st flowering	55 days
(2)	Sowing to 1st harvest	95 days
(3)	Seed to seed	135 days
	Yield:	
(a)	Commercial product	32 Mt/ha.
(b)	Seed	235-250 kg/ha.

20.	Crop	Redgram
	Variety	SA.1
	Parentage	Pureline selection from Tirupathur local in North Arcot district of Tamil Nadu.
	Breeder/Institute responsible for maintaining the breeder's stock	Tamil Nadu Agricultural University, Coimbatore-3.
	Description of the variety	Pureline selection from Tirupathur local in North Arcot District of Tamil Nadu. Semispreading, stem pale green with purple wash, grooved, yellow petals back of standard yellow with faint red veins, pods green with purple streaks seed reddish brown 1000 grain 100 grams duration 180 days.
	Two identifiable and distinguishable morphological characteristics	(1) Stem pale green with purple wash grooved yellow petals. (2) Pods green with purple streaks seeds reddish brown.
	Yield:	
	(a) Commercial product	1250 kg of seed/ha (under rainfed —condition)
	(b) Seed	

21.	Crop	*Panaivaragu*	
	Variety	CO. 2.	
	Parentage	A pureline selection from a local collection from Manjanaikanur in Annamalai block Coimbatore Dist., Tamilnadu.	
	Breeder/Institute responsible for maintaining the breeder's stock	Millet Breeding station School of Genetics, Tamilnadu Agricultural University, Coimbatore-641 003.	
	Description of the variety	(a) Plant height	60-70 cm.
		(b) Distinguishable morphological characters	Plant is green throughout, profusely tillering densely pubescent, branched open and drooping panicles, yellow anthers, shining yellow bold grains.
		(c) Days to flowering	35-40
		(d) Days to maturity	70-75
	Two identifiable and distinguishable morphological characteristics	(1) Shining yellow bold grain. (2) Densely pubescent.	
	Yield: Commercial product Seed.	1600 kg/ha.	

22. Crop	Ribbed Gourd
Variety	CO.2
Parentage	Selection from Coimbatore type LA. 11.
Breeder/Institute responsible for maintaining the breeder's stock	Department of Olericulture, Faculty of Horticulture, Tamil Nadu Agril. University, Coimbatore-3.
Description of the variety	It is a selection from a local type L.A. 11. The plants are moderately vigorous with less spreading. Adaptable to all seasons. The fruits are very long slender and light green in colour, bearing 10-1 fruits per vine. The fruits mature in 12 to 14 days after flower opening.
Two identifiable and distinguishable morphological characteristics	Fruits are very long (1.25 m) light green in colour with shallow grooves.
Yield :	
(a) Commercial product	25.5 tonnes/ha.
(b) Seed	300 kg/ha.

23. Crop	Mochai (*Lab-lab*)
Variety	CO.2
Parentage	Derivative of the cross Co. 8 × Co·1
Breeder/Institute responsible for maintaining the breeder's stock	School Genetics, Tamil Nadu Agril. University, Coimbatore-3.
Description of the variety	Plants erect 60 cm, bushy 5-6 branches Flowers borne on axillary recemes Pinkish purple at blossom and phash purple at dropping. Pods 40% plant flat, green and four seeded. Seeds medium, ovate and black photoinsensitive.
Two identifiable and distinguishable morphological characteristics.	(1) Erect and bushy stature. (2) Pinkish purple flower fading into bluish purple. (3) Black seed.
Yield :	
(a) Commercial product	880 kg/ha (Rainfed) 1460 kg/ha (Irrigated)
(b) Seed	Trend is similar to Commercial product.

24. Crop	Bitter gourd	
Variety	MDU. 1	
Parentage	Evolved by induced mutation by gammarays at 50 kr on a local type MC-103	
Breeder/Institute responsible for maintaining the breeder's stock	Department of Horticulture, Agricultural College and Res. Inst, Tamilnadu Agril. University, Madurai-625 104.	
Description of the variety	(a) Plant height	It is a climber
	(b) Distinguishable morphological characters	Nature of vine—thick (1-7 cm) Branching nature—medium (45.0) Number of leaves moderate (340.0) Flowering time—medium (60 days) Fruit size-Extra long (40.34 cm) Thickness—thick (17.34 cm) Colour of fruit—creamy white.
	(c) Maturity (days) germination to flowering	(1) Male flowers (days) : 52.00 (2) Female flowers (days) : 63.67
Two identifiable and distinguishable morphological characteristics	(1) The fruits are extra long (40.34 cm) (2) Colour of fruit is creamy white.	
Yield:		
(a) Commercial product	32.0 tons of fruits/ha	
(b) Seed	400 kg per ha.	

25. Crop		Ragi
Variety	:	Paiyur-1
Parentage	:	Pure line selection from Andhra Pradesh variety PR. 722.
Breeder/Institute responsible for maintaining the breeder's stock	:	Regional Research Station, Tamil Nadu Agricultural University, Paiyur.
Description of the variety	:	
Parentage	:	Pureline selection from AP variety PR. 722.
Duration (Days)	:	115—120
Plant Height (cm)	:	110
Distinguishable morphological characters	:	Plant are medium tall, green throughout open earheads with long fingers
Earhead stage	:	Open
Finger length		11 cm
No. of fingers/ear	:	6-8
No. of productive tillers		1-3
Weight of 1000 grain	:	2.7 g.
Average yield kg/ha.	:	Grain : 1800 Straw : 4250
Two identifiable and distinguishable morphological characteristics	:	(1) Open earheads with long finger (2) Non pigmented foliage.
Yield:		
(a) Commercial product	:	1800 kg.
(b) Seed	:	

Proceedings of the Third Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 25th March, 1985 under the Chairmanship of Dy. Director General (CS), ICAR in Krishi Bhavan, New Delhi

The list of the participants is attached as Annexure I.

2. The Chairman welcomed the members and appreciated their keen interest shown in attending the Meeting in big strength. He further enunciated that the enshrined aim of the Committee is to push the good cultivars in such a way that their seeds could be made available to the farmers in the shortest possible period. This would help the farmers to reap the advantages of the technological advancement achieved in the breeding of good varieties. However, at the same time, it is also the duty of the Committee to stop the bad cultivars at initial stage so that they may not reach into the fields and cause harm to the farmers of the country. During discussion of the various proposals, the Committee recommended the following for further improvement in the process of release and notification of varieties.

(i) **Naming of the Varieties.**—To adopt a standard name for the varieties approved for release and notification is one of the terms of reference of the Committee. Therefore, the Committee should specify a standard procedure of naming the varieties. The Committee was also of the opinion that naming of the varieties after Gods, Godesses, political leaders and scientists should be avoided. It was also decided that Chairman of the Committee would write a letter to all the concerned to develop a suitable procedure for naming of the varieties.

(ii) Under the coordinated trials, comparison of the new genotype should also be made with the latest released and identified varieties of the latest or last Workshop should also continue in the trials in the following years as a check. This should be communicated to all Project Directors/Coordinators of Crop Projects also to the agricultural universities.

(iii) **Venue of the next Meeting.**—Majority of the participants were of the opinion that next Meeting of the Committee might be held outside Delhi preferably in the State Headquarter of any State.

(iv) The Committee was of the opinion that breeder seeds should be supplied by breeders in the form and manner specified in Government of India's Memorandum No. 18-5/82-SD dated 23-4-82. The breeders who produce the breeder seeds and supply to the Industry should be instructed to affix the prescribed tag on the breeder seed containers duly signed by them. This will facilitate the certification agency to authenticate the source of the seeds.

(v) The Project Coordinator of Sunflower should label the seeds as breeder seeds and foundation seeds in place of using the terminology such as super-elite or elite.

(vi) Many agencies who are proposing varieties for release/notification are not giving identification or descriptive characters of their varieties to help the certification agencies. We should request these agencies to indicate the diagnostic characters clearly.

(vii) The breeder seeds availability in case of some varieties is too low to justify notification of varieties released several years ago. This shows that the varieties are not popular or there is no proper organisation of seed multiplication programme of the variety.

3. After this, the regular agenda was taken up for discussions and the position in respect of the each item is indicated below:—

Item No. 1 : Confirmation of the Second Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 24 th January, 1985.

The comments of Dr. Yadav Project Director (Oilseeds) received about the recommendations of the Committee for Notification of Groundnut varieties namely Chitra and UF-70-103 were put up before the Committee. The participants were of the opinion that these varieties were recommended for notification and correct position has been reflected in the proceedings. The minutes of the earlier Meeting were confirmed.

Item No. 2: Review of the action taken on review of the Second Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

The position indicated in the agenda notes were noted by the Committee/participants.

Item No. 3 : Consideration of the proposals for Release.

28 proposals of various pertaining to different crops were evaluated for release. The observations of the Central Sub-Communication on Crop Standards, Notification and Release of Varieties on each proposal is indicated as under :

Details of the varieties recommended for release and also for notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	PBW-34	(i) Recommended for release for cultivation under normal sown high fertility irrigated conditions of the entire Northern Plains Zone. (ii) Recommended for notification for entire country.
2.	Wheat	Raj-2184	(i) Recommended for release for cultivation in North Western Plains Zone of the country under late sown, high fertility conditions. (ii) Recommended for notification for entire country.
3.	Wheat	HD-2329	(i) Recommended for release for cultivation for high fertility normal sown irrigated conditions in Northern Plains Zone (Punjab, plains of Jammu, Delhi, Western U.P., Eastern Haryana, Alwar, Bharatpur and Sriganganagar districts of Rajasthan, Gwalior, Bhind and Morena districts of Madhya Pradesh except sub-mountainous districts of Ropar, Gurdaspur and Hoshiarpur) (ii) Recommended for notification for entire country.
4.	Wheat	Pragati (DWR-39)	(i) Recommended for release for cultivation in all soils and climatic conditions of peninsular zone. (ii) Recommended for notification for entire country.
5.	Wheat	WL-2265	(i) Recommended for release for cultivation in rainfed areas of the entire North Plains Zone. (ii) Already notified vide S.O. No. 19(E) dated 13-8-1984.
6.	Ragi .	PES-110	(i) Recommended for release for cultivation in all States of the country except high hills. (ii) Recommended for notification for entire country. (iii) The Sponsoring Authority would submit the identifiable and distinguishable morphological characters of the variety and also the quantity of breeder seed available. After receipt of the same it would be circulated among all members of the Committee.
7.	Lucerne	LL Composite-3	(i) Recommended for release for cultivation throughout India. (ii) Recommended for notification for entire country. (iii) However, the sponsoring authority is advised to submit the detailed identifiable and distinguishable morphological characters and data from the adaptive trials. The sponsoring authority should submit the above information to the Committee at the earliest.
8.	Soyabean	Monetta (EC-2587)	(i) Recommended for release for cultivation in Central Zone. (ii) Recommended for notification for entire country.
9.	Cotton	BC-761	(i) Recommended for release for cultivation in major cotton area of Punjab, Haryana and Western Rajasthan. (ii) Recommended for notification for entire country.
10.	Tossa Jute	JRO-3690	(i) Recommended for release for cultivation in all the areas of jute belt in the mid and high lands in April sowing. (ii) Recommended for notification for entire country.
11.	Brinjal	Pant Rituraj	(i) Recommended for release for cultivation in entire country. (ii) Recommended for notification for entire country.

1	2	3	4
12.	Tomato	Pant Bahar	(i) Recommended for release for cultivation in both autumn-winter as well as spring-summer season in the plain. (ii) Recommended for notification for entire country.
13.	Gram	Pusa-244	(i) Recommended for release for cultivation under rainfed and irrigated conditions in the States of Madhya Pradesh, Rajasthan and Gujarat. (ii) Recommended for notification for entire country.
14.	Gram	Pusa-256	(i) Recommended for release for cultivation under rainfed and irrigated conditions in the States of U.P., Bihar, West Bengal and all other areas where bold seeded varieties are preferred. (ii) Recommended for notification for entire country.
15.	Sisal (Agave)	Lila	(i) Recommended for release for cultivation in all areas of Sisal growing tract of India.
16.	Ramie	R-67-34	(i) Recommended for release for cultivation in Ramie cultivated areas of North East Region of India.

The details of the important features of the above varieties are given in Annexure II.

Details of the varieties wherein sponsoring authorities have been advised to re-submit the proposal with additional information as indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	Raj-1972	(i) The variety should be compared with already released and notified variety Raj-1482. (ii) The proposal might be re-put up alongwith data generated and comparative statement indicating the performance of the variety vis-a-vis Raj-1482.
2.	Wheat	GW-405	(i) The variety should be tested for one more year under adaptive trials. During adaptive trials disease reaction should also be observed. (ii) Proposal might be re-put up alongwith data of adaptive trials and disease reaction.
3.	Wheat	GW-120	(i) The variety should be tested for one more year under adaptive trials. (ii) Proposal might be re-put up alongwith data generated under adaptive trials.
4.	Barley	Karan-3	(i) Data pertaining to disease reaction might be submitted. (ii) Quantity of breeder seeds available may also be indicated. (iii) Comparative statement of all the five varieties evaluating against each other might be submitted. (iv) In case of Karan-3 and Karan-16 the yield data pertaining to Rajasthan might be submitted. (v) In case of Karan-18, the yield data pertaining to Sunderban delta might be submitted. (vi) The proposals of all the five varieties namely; Karan-3, Karan-16, Karan-18, Karan-19 and Karan-280 might also be re-put up alongwith the above information.
5.	Barley	Karan-16	
6.	Barley	Karan-18	
7.	Barley	Karan-19	
8.	Barley	Karan-280	
9.	Berseem	B.L.-22	(i) The identifiable and distinguishable characters might be described in details. (ii) Variety might be tested for one more year under adaptive trials. (iii) Quantity of breeder seeds might be indicated. (iv) The proposal might be re-put up alongwith the above information.

1	2	3	4
10.	Gram	Pusa-261	(i) The sponsoring authority might submit the data of individual Station of Coordinated Trials. (ii) After receipt of the data the Chairman of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties would decide the release and notification of the varicty based on the performance of the varitey at various stations.

Details of the varieties which are not recommended for release

Sl. No.	Crop	Variety	Remarks
1.	Ragi	PES-176	(i) The variety has not been compared with suitable check. (ii) Data of All India level are not available. (iii) Characters have not been defined sufficiently. (iv) Quantity of breeder seeds not indicated.
2.	Yellow Sarson	PYS-6	(i) The data of adaptive trials are not available. (ii) The variety has not been evaluated against suitable checks and thus comparison with other varieties is insufficient.

Item No. 4: Consideration of the proposals for notification under Section 5 of the Seeds Act.

27 proposals of various varieties of different crops were evaluated for Notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is mentioned as under:

Details of the varieties recommended for notification under Section 5 of the Seeds Act

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	Tawa-267	Recommended for notification for entire country.
2.	Sorghum	SB-905	-do-
3.	Sorghum	SPV-245	-do-
4.	Sorghum	SPV-96	-do-
5.	Paddy	BK-79	-do-
6.	Paddy	VL Dhan-206	-do-
7.	Paddy	VL Dhan-16	-do-
8.	Barley	VL Barley-1	-do-
9.	Dharaf (Crysopogon montanus)	GAU-D-1	-do-
10.	Soyabean	VL Soya-1	-do-
11.	Cotton	F-286	-do-
12.	Lesser Yam	De-11	-do-
13.	Sorghum	CO. 21	-do-
14.	Sorghum	CO.22	-do-
15.	Green gram	CO. 2	-do-
16.	Green gram	CO. 3	-do-
17.	Red gram	CO. 2	-do-
18.	Red gram	CO. 3	-do-
19.	Lab-lab	CO. 8	-do-

The details of the important features of the above varieties are given in Annexure III.

Details of the varieties wherein views of the Project Director/Project Coordinators have been requested. After receipt of the views the varieties would re-evaluated and Chairman of Committee would take the decision about their Notification

Sl. No.	Crop	Variety	Remarks
1.	Paddy	GR-101	The views of the Project Director/Project Coordinators might be asked.
2.	Guar	Durgabahar (RGC-955)	-do-
3.	Sorghum	CO. 25	-do-
4.	Maize	CO. 1	-do-
5.	Ragi	CO. 12	-do-
6.	Greengram	Paiyur-1	-do-
7.	Paddy	TPS-1	-do-
8.	Cotton	Karunganni-10 (K-10)	-do-

Item No. 5 : Proposal of the release of the Wheat variety DL-20-9.

The information submitted by sponsoring authority related to the performance of the variety under minikit trials was considered by the Committee. The Committee was in agreement with the opinion indicated by Project Director (Wheat) that the minikit data have been generated for late sown conditions (Dec. sowing) when the variety was identified for normal sown conditions and has never entered research trials under late sowing. Apart from that the Minikits have been organised around Haldwani which falls in the foot hills and this part of the district of Nainital is covered under the northern plain zone and not under the Northern hill zone for which DL-20-9 was identified.

The Committee did not recommend the variety for release.

Other item:

1. **Morphological Characters of the Wheat variety Narmada-195.**—The wheat variety Narmada-195 has already been notified vide S.O. No. 19(E) dated 14-1-82. The sponsoring authority has submitted the morphological characters in details for easy identification of the variety during certification. The same are given as under:—

Plant height	—	99—100 cms. (Rainfed)
Stem & Foliage	—	Plant type erect, Straw thick, green profuse, tillering, medium early maturity.
Ear	—	Fusiform, compact glume pubescent white sometimes Awns turn black at maturity awns mid long convergent.
Seed characters	—	Seed colour—amber lustrous
Seed shape	—	Bold, semi hard.
Seed weight	—	1000 grains weight 45 gms.
Quality	—	Protein 12%
Two identifiable & distinguishable morphological character of the variety	—	Glumes, pubescent, white, Awns, sometime change black, mid long convergent.

2. **Developing of the Minimum Seed Certification Standards for Dharaf & Lesser Yam crops.**—The varieties of GAU-D-1 and De-11 of Dharaf and Lesser Yam respectively have been recommended for notification under Section 5 of the Seeds Act. After notification these varieties would become eligible for certification under Section 9 of the Seeds Act. Presently Minimum Seed Certification Standards are not available of these crops. The Committee has desired that concerned Project Director might be approached to submit the draft MSCS for the consideration of the Central Seed Certification Board.

The Meeting ended with a vote of thanks to the chair.

ANNEXURE I

List of the participants who have attended the Third Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 25th March, 1985 under the Chairmanship of Dy. Director General (CS), ICAR in Krishi Bhavan, New Delhi

1.	Dr. M.V. Rao, Dy. Director General (CS) ICAR, Krishi Bhavan, New Delhi.	*Chairman*
2.	Dr. P.K. Agrawal, Head, Divn. of Seed Sciences and Tech. IARI, Pusa, New Delhi-110 012.	*Member*
3.	Dr. Munshi Singh, Head, Divn. of Genetics, IARI, New Delhi.	*Member*
4.	Shri R.R. Sharma, Director of Agriculture, Uttar Pradesh, Lucknow.	*Member*
5.	Sh. S.S. Sandhu Director of Agriculture, Punjab, Chandigarh.	*Member*
6.	Dr. D.N. Ram, Director of Agriculture, Bihar, Patna.	*Member*
7.	Shri B.N. Sehgal, Chief Seed Certification Officer, Delhi Administration, Delhi.	*Member*
8.	Shri H.L. Trivedi, Director, Gujarat State Seed Certification Agency, Ahmedabad.	*Member*
9.	Shri Hari Krishna, Director Seed Certification Agency, Lucknow (UP)	*Member*
10.	Shri S.K. Gupta, Managing Director, MP State Seed Certification Agency Bhopal.	*Member*
11.	Sh. J.N. Johri, Director, Rajasthan State Seed Certification Agency, Jaipur.	*Member*
12.	Shri P.S. Chaudhary, Director, Maharashtra State Seed Certification Agency, Pune.	*Member*
13.	Shri S. Vinayagam, Director, Tamilnadu State Seed Certification Agency, Coimbatore (TN).	*Member*
14.	Shri B.S. Gill, Director, Punjab State Seed Certification Authority, Chandigarh.	*Member*
15.	Sh. K.P. Singh, Director, Haryana State Seed Certification Agency, Chandigarh.	*Member*

Others

16. Sh. K.C. Katyal,
Chief Prodn. Division,
National Seeds Corporation Ltd.,
Beej Bhavan, Pusa Complex,
New Delhi-110 012.

17. Sh. J.P. Tondon,
Project Director (Wheat),
IA.R.I., New Delhi.

18. Sh. N. Pinagapany,
Additional Director of Agriculture,
Tamilnadu.

19. Sh. V. Subramaniam,
Jt. Director of Agriculture (SSF),
Madras-5.

20. Sh. K.G. Roy,
Chief Seed Certification Officer,
West Bengal.

21. Sh. B. Bhatta Cherje,
Att. Horticulturist, Mizoram.

22. Sh. H.R. Hali,
Additional Director of Agriculture,
Directorate of Agriculture,
Trivandrum, Kerala.

23. Sh. Ashok Chauhan,
Asstt. Agronomist, (HQRS)
Representing Director of Agriculture,
Rajasthan, Jaipur.

24. Sh. N.S. Tunwar,
Officer on Special Duty (QC&T),
Ministry of Agriculture & Rural Development, Deptt. of Agri. & Coopn.,
F/118, Shastri Bhavan, New Delhi.

25. Sh. M.S. Shukla,
Dy. Seed Officer,
Ministry of Agriculture & Rural Dev.,
Deptt. of Agri. & Coopn.,
F/218, Shastri Bhavan, New Delhi.

ANNEXURE II

The important features of the varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 3rd Meeting held on 25th March, 1985

1. Name of the Crop : Wheat (*Triticum durum* Desf.)

Name of the Variety : PBW-34

Institution or Agency responsible for developing the variety : Punjab Agricultural University, Ludhiana.

Parentage with details of its pedigree : PBW-34 was developed through pedigree selection from the progeny of the cross Anhinga 'S' × Flamingo 'S' .

Specific areas of its adaptation : Normal sown high fertility irrigated conditions of the entire Northern Plain Zone.

description of variety :

(a) Plant height : It is a double dwarf variety with an average plant height of 100 cm.

(b) Distinguishing morphological characters : It possesses synchrony in tillering and maturity and does not bear late tillers. It possesses partially hairy glumes and deep amber grains mostly free of mottling tendency. It possesses deep amber, bold, hard and lustrous grains.

(c) Maturity (range in number of days) Seeding/Transplanting of flowering seed to seed : It takes about 140 days to mature (from seed to seed).

(d) Reaction of major diseases in the field and also under controlled conditions (reaction to physiological strains/races/biotypes to be indicated whatever possible) : It is highly resistant to yellow, brown and black rusts and is free from loose smut and kernal bunt diseases.

(e) Reaction to major pests (in field conditions and in controlled conditions including pests of storage) : It has shown resistance to all the prevalent wheat pests.

(f) Agronomic features (e.g. resistance to lodging, drought frost, and shattering, fertilisers responsiveness, suitability for early or late sown conditions, seed rate etc. : It is resistant to lodging, drought, frost and shattering. It is highly responsive to fertilization with suitability for early to medium sown conditions. The recommended seed rate is 35 Kg/Acre.

Agency responsible for maintaining breeder's stock: Wheat Breeder Dept. of Plant Breeding, Punjab Agricultural University, Ludhiana.

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2. Name of the Crop : Wheat (*Triticum aestivum* L.)

Name of the Variety : Raj 2184

Institution or Agency responsible for developing the variety : Agril. Research Station, Sukhadia University, Durgapura, Jaipur (Raj)

Parentage with details of its pedigree : UP 291 × HD 2206

Specific araes of its adaptation : North Western Plains Zone of the Country. The variety is to replace Sonalika.

Description of variety ,

(a) Plant height : 73-107 cms.

(b) Distinguishing morphological characters. : It is a double gene dwarf variety. Non-hairy, white glumed having long elliptical ear heads which droop at the time of maturity. Early maturity and suitable for late sown conditions. Easy threshabiblty due to fragile rachis.

(c) Maturity (range in number of days) Seeding/Transplanting to flowering seed to seed : 100—110 days.

(d) Reaction of major diseases in the field and also under controlled conditions (reaction of physiological strains/races/biotypes to be indicated whatever possible) : Resistant to black and yellow rusts loose smut and alternaria blight. It has shown 5S to brown rusts.

(e) Reaction to major pests (in field conditions and in controlled conditions including pests of storage) : No insect attack of acute nature was reported.

(f) Agronomic features (e.g. resistance to lodging, drought, frost and shattering, fertiliser responsiveness; suitability for early or late sown conditions, seed rate, etc. : Variety shows good degree of tolerance to lodging, drought, frost and shattering. Gives response to the application of fertilizer and irrigation. Most suitable for wide range of sowing dates. Its grain weight to normal (35-41 gms/1000 grains) but due to closer spacing for late sown conditions (18 to 20 cms from row to row) 120-125 kg/ha seed should be used.

Agency responsible for maintaining breeder's stock : Wheat Specialist, Agriculture Research Station, Sukhadia University, Durgapura, Jaipur, (Rajasthan).

3. Name of the Crop : Wheat (*Triticum aestivum.* L)

Name of the variety : HD 2329

Institution or agency responsible for developing variety : Division of Genetics, IARI, New Delhi.

Parentage with details of its pedigree : HD 1962—E 4870—K 65 × HD 1553/UP 262 Pedigree method.

Specific areas of its adaptation : Northern Plains Zone (Punjab, Plains of Jammu, Delhi, Western UP, Eastern Haryana, Alwar, Bharatput and Sriganganagar districts of Rajasthan, Gwalior, Bhind and Morena districts of Madhya Pradesh).

Description of variety :

(a) Plant height : Double dwarf (85-90 cms).

(b) Distinguishing morphological characters :

- (i) Early growth habit : Semi-erect
- (ii) Tillering Capacity : Very good
- (iii) Colour of foliage & Stem : Dark green
- (iv) Ear shape : Fusi form
- (v) Ear density : Mid-dense.
- (vi) Awning : Fully awned
- (vii) Glume Colour : Dark brown
- (viii) Glume hairiness : Glabrous
- (ix) Awn Colour : Brown
- (x) Fragility of rachis : Tough
- (xi) Threshability : Easy
- (xii) Grain Colour : Amber
- (xiii) Grain texture : Hard
- (xiv) Grain size : Medium bold

Maturity (range in number of days seeding to flowering and seed to seed) : Medium early

Days of flowering : 90—100

Days to maturity : 135—140

Agency responsible for maintaining breeder's stock : Senior Wheat Breeder, Division of Genetics, IARI, New Delhi-12.

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4. Name of the Crop : Wheat

Name of the Variety : Pragati (DWR-39)

Institution or agency responsible for developing the variety : Wheat Improvement Project, R.R.S., Dharwad Campus, University Agril. Sciences.

Parentage with details of its pedigree : HD 1508 × S. 308

Specific area of its adaptation : (a) It is suitable to all soils and climatic conditions of Peninsular Zone.

(b) It is suitable to late sown and moisture stress conditions.

Description of the Variety : (a) Plant height (cm) : 81·7 on an average

(b) Distinguising morphological characters

It has slight non waxy and bright green stem leaves, ears, and awns, as compared to waxy habit of HD-2189. It has very long and massive awns as compared to short awns of HD-2189. It gives impression of more awns than that of HD-2189. The ears will bend sideways on drying.

(c) Maturity (Av. No. of days) Seed to seed 105-110 days.

(d) Reaction to major disease in the field and also under controlled conditions.

It possesses high degree of resistance in the field as well as to all races of black stem rust under brown rust diseases than HD-2189. HD-2189 is susceptible to 5 races of black and 2 races of brown rust disease.

(e) Reaction to major pests in field conditions and in controlled conditions. No incidence of any major pest is observed on wheat crop.

(f) Agronomic features (eg) resistant to lodging drought, frost and shattering fertilizer responsiveness suitable to late sown or early sown conditions, seed rate etc.

DWR-39 is resistant to lodging. It is suitable to moisture stress and late sown conditions. It is suitable to heavy fertility condition. The normal seed rate may be adopted in this variety also.

Agency responsible for maintaining breeder's seed stock : University of Agril. Sciences and Wheat Breeder, R.R.S., Dharwad.

5. **Name of the Crop** Wheat (*Triticum Durum*)

Name of the Variety : **WL 2265**

Institution or agency responsible for developing the variety : Punjab Agricultural University, Ludhiana.

Parentage with details of its pedigree : WL-2265 has been developed from a cross NP-Tob's × B 156/Kal-Bb through pedigree method

Specific areas of its adaptation : The rainfed area of the entire North Plains Zone.

Description of the variety:

(a) Plant height (cm)

Name of the variety	Plant height year-wise			
	1978-79	1979-80	1980-81	1981-82
1. WL-2265	94-96	79-103	92-126	82-127
2. WL-410 (Check)	72-92	78-95	78-110	86-123
3. C-306 (Check	100-110	96-121	125-139	105-192

(b) Distinguishing morphological characters : WL 2265 is a one-gene dwarf variety with bold, bearded ears having white glumes. It has medium to hard threshing.

(c) Maturity (ranged in number of days) seeding/ Transplanting to flowering :

	1978-79	1979-80	1980-81	1981-82
WL-2265	Med-Late	Med-Late	Med-Late	Med-Late
WL-310	Med-Early	Med-Late	Med-Late	Med-Late
C-306	Med-Late	Late	Med-Late	Late

Agency responsible for maintaining breeder's stock (Quality of Breeder seed, stock on hand) : Punjab Agricultural University.

6. Name of the Crop : Ragi (*Eleusine coracana*)

Name of the variety : PES-110

Institution or Agency responsible for developing the variety : G.B. Pant University of Agril. & Technology, Pantnagar (Nainital).

Parentage with details of its pedigree : Individual plant selection from IE germplasm.

Specific area of its adaptability : All States of the Country except high hills.

Description of the variety :

(a) Plant height : 90-95 cm.

(b) Distinguishing morphological characters : High tillering (3.83) Top in curved earheads, slightly shorter fingers 6.6 cm). as compared to PR 202 (6.99 cm), brown ear colour at maturity 7-8 fingers per earhead.

(c) Grain colour : Bold light brown

(d) Maturity : 111-115 days.

(e) Reaction to major diseases : Resistant to leaf, neck and finger blast.

(f) Reaction to insect pests : Resistant to stem borer. Resistant to Jassids, Aphids and Grey weevil· No other problem reported so far.

(g) 1000 grain weight : 3.439 gms.

Agency responsible for maintaining breeder seed : G.B. Pant University of Agril. & Tech., Pantnagar (Nainital).

7. Name of the crop : Lucerne (*Medicago sativa* L.)

Name of the variety : LL Composite-3

Instiution or Agency responsible for developing the variety : Department of Animal Sciences, Punjab Agricultural University, Ludhiana

Parentage with details of its pedigree		synthesized from 20 clones selected for fast growth, high yield and dowry mildew resistance from the germplasm collected from different parts of Gujarat State. Further simple recurrent selection was followed to improve resistance to downy mildew and growth rate.
Specific areas of its adaptation		Throughout India.
***Description of the variety* :**		
(i) Plant height		72 cm
(ii) Distinguishing morphological characters	.	Erect and tall plants with broad dark green leaves. Flower large and purple in colour. Seeds are bold. Fairly resistant to downy mildew.
(iii) Maturity (range in number of days seeding to flowering, seed to seed).	:	The crop takes 65 days from sowing first cutting. Subsequent cuttings are ready after intervals of 40 days in winter and 25-30 days in summer.
(iv) Reaction to major diseases (in field and controlled conditions).	:	Fairly resistant to downy mildew under field conditions.
(v) Reaction to major pests (in field conditions and in controlled conditions including pests of storage)	:	..
(vi) Agronomic features (e.g. resistance to lodging, drought, frost and shattering, fertilizers responsiveness, suitability for early or late sown conditions, seed rate etc.)	:	Resistant to lodging and frost. Suitable for normal sown conditions.
(vii) Description of parents of the variety	:	Composite variety.
(viii) Quality of produce (grains, forage, fibre including nutritive value where relevant).	:	The quality of LL Composite-3 is at par with T-9, a standard variety.
Agency responsible for maintaining breeder's stock. (quantity of breeder's seed stock in hand.)	:	Punjab Agricultural University, Ludhiana, Punjab.

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8. Name of the Crop	:	Soyabean (*Glycine max* L. Merr.)
Name of the Variety	:	Monetta (E.C. 2587)
Institution or agency responsible for developing the variety.	:	Maharashtra Association for the cultivation of Science, Post graduate Research Institute, Law College Road, Pune-411 004.
Parentage with details of its pedigree	:	It is an exotic variety received from the Soyabean Coordinator in 1968 under their accession number EC 2587.
Specific area for its adaptation	:	Central Zone—Maharashtra.
Description of the Variety		
(a) Distinguishing morphological characters	:	(i) Marked with purple pigmentation at the hypocotyl region at seedling stage. (ii) Plants are determinate with semi-dwarf growth habit. (iii) Leaves are oblong and wide in shape. (iv) The duration from sowing to 50% flowering is 34-36 days. (v) Flowers are purple in colour. (vi) The stem and pods are covered with dense brown pubescence at maturity. (vii) Seeds are round, shining and with light brown hilum and medium to bold in size (100 seeds weight 13.0-17.0 g) with cream coloured seed coat.
(b) Plant height	:	Plants are semi-dwarf with determinate erect growth habit, with average height of 54 cm.
(c) Maturity (range in number of days)	:	It matures in 76 to 80 days. The harvesting should be done in time soon after 85-90% pods have attained maturity.
(d) Reaction to major diseases	:	No incidence of diseases has been observed.
(e) Reaction to major pest	:	Under field conditions no incidence of insect attack was observed.
(f) Agronomic features	:	Resistance to lodging, drought, frost and shattering, fertilizer response, suitability for early or late sown conditions, seed rate, etc.
(i) Resistance to lodging	:	It is resistant to lodging.
(ii) Resistance to shattering	:	Delayed harvest may cause shattering of seeds. Hence harvesting should be done in time soon after 85-90% pods have attained maturity.
Agency responsible for maintaining the breeder's seed stock.	:	Director, Maharashtra Association for the Cultivation of Science, Law College Road, Pune 411 004.

9. Name of the Crop : Cotton (*G. hirsutum* L.)

Name of the variety : BC-761

Institution or agency responsible for developing the variety. : Indian Agricultural Research Institute, New Delhi-110012.

Parentage with details of its pedigree : (PS 10 × Badnawar-1) × PS 10

Specific areas of its adaptation : Major cotton area of Punjab, Haryana and Western Rajasthan.

Description of the variety

(a) Plant height : Tall spreading type (120 cm)

(b) Distinguishing morphological characters : Small leaf, high ginning out-turn (35%) fuzzy seed, H.I. 25.0%

(c) Maturity (range in number of days) seeding/Transplanting to flowering seed to seed : 150-160 days

(d) Reaction to major diseases (in the field and also under controlled conditions (reaction to physiological strains/races biotypes to be indicated whatever possible). : Tolerant to Black arm (Grade) 3.0 as compared to 2.9 in B.N. susceptible in artifically inoculated condition.

(e) Reaction to major pests in field conditions and in controlled conditions including pests of storage) : "Tolerant to Jassid (J.G. 2.0 as compared to 2.0 in B.N. and boll worm damage (35.6% as compared to 35.9 in B.N.)"

(f) Agronomic features (e.g., resistance to lodging drought, frost and shattering fertilizer responsiveness, suitability for early or late-sown conditions, seed rate etc.) : "Suitable for mid-May sowing under normal irrigated condition of North. Seed rate 20 Kg/ha with normal agronomical practices as applied for presen cultivated varieties."

(g) Quality of produce of grain forage/fibre/including nutritive value, where relevant. : "Microspinning test at par with control (30 counts) as per Co-ordinated Report". Spinning 30 counts equivalent to control varieties.

Agency responsible for maintaining breeder's stock : Head, Division of Genetics, IARI, New Delhi-110012.

10. Name of the Crop : Tossa Jute (*Corchorus Olitorius* L.)

Name of the variety : JRO-3690

Institution or agency responsible for developing the variety. : Jute Agricultural Research Institute, ICAR, Barrackpore (W.B.)

Parentage with details of its pedigree : The development of this variety is perhaps a unique example in the history of mutation breeding and crop improvement. Two dwarf mutants which were uneconomical in themselves have been utilised in developing this variety of Jute in the following manner :

A mutant called "Tobacco leaf" was developed through X-rays (50 Kr) after treating dry seeds of JRO-632. This mutant possesses broader leaves like tobacco leaves with more number of internodes as compared to other Jute varieties. The average plant height being 185 cm. only. Another mutant named "Long internodes" was also induced through X-rays (50 Kr) in the same manner. This particular mutant possesses small narrow leaves with larger size of internodes and attains a plant height of nearly 145 cm. However, the number of internodes in this mutant was comparatively less compared to other Jute varieties. These dwarf mutants were crossed together. The F-1 was raised which was found to surpass the normal standard type in height. The plant height of the F-1 population averaged 450 cm to 500 cm. The F-2 segregated in a digenic ratio of 9:7 suggesting that the characters of internodes is controlled by complimentary genes. Further studies indicated that the character of more internode number and bigger size of the internodes are dominant over less internodes number and small size of internodes. If one of the dominant factors is absent the height is reduced. The tallness is achieved when both the genes are present in dominant stage. The variety JRO-3690 is the result of this interesting cross combination.

Area of Adaptation . Suitable for all the areas of Jute belt in the mid and high lands in April sowings.

Description of the variety : JRO-3690.

(a) Plant height : 3.8 m to 4.5 m

(b) Basal diameter : 1.0 cm to 2.4 cm

(c) Morphological characters : Stem is full green and more or less cylindrical in shape. Leaves have shining surface and are slightly bigger in size. Growth is better and two phases of growth are evident. Flowers are pale yellow in colour. Pods are green and cylindrical in shape. Seeds are steel grey in colour.

(d) Maturity : 120 to 130 days.

Agency responsible for maintaining the breeder's stock : Central Nucleus Jute Seeds Multiplication Farm (ICAR), P.O. Bud Bud, Distt. Burdwan.

11.	Name of the Crop	Sisal (*Agave*)
	Name of the variety	Lila
	Institution or agency responsible for the developing of variety	Sisal Research Station, Bamra (Orissa) under the All India Coordinated Res. Project and later Jute Agricultural Research Institute, Barrackpore (W.B.).
	Parentage with details of its pedigree	The hybrid has been developed by crossing two spices of Agaves i.e. *A. amaniensis* and *A. angustifolia*. The species *A. amaniensis* which is popularly known as blue sisal possesses bigger size of leaves, while *A. angustifolia* possesses smaller size of leaves but the number of leaves are much more compared to any other Agave species including *A. sisalana*. The variety Bamra Hybrid-1 is the result of the interspecific cross between the above two species.
	Area of Adaptation	Suitable for all the areas of sisal growing tracts of India.
	Description of the variety :	
	(a) Number of leaves	On average 50 to 75 leaves can be harvested per annual cut.
	(b) Morphological characters	The plant is healthy with average length of leaves equal to 70 to 85 cm. in a plant. The leaves are erect and form much narrower angle. The configuration of leaves is also better than the control. The leaves are having smooth margins and are rigid in nature.
	(c) Maturity	The harvesting can be started from 3rd year after planting and can go up to 12th year economically.
	(d) Reaction to major diseases and pests	No major disease or pest attacks the plant except Zebra disease to some extent which can be controlled economically by proper management and spraying fungicides.
	Agency responsible for maintaining the breeder's stock	Sisal Research Station, Bamra (Orissa)

12.	Name of the Crop	Ramie (*Boehmeria nivea*)
	Name of the Variety	R-67-34
	Institution or agency responsible for developing the variety	Ramie Research Station, Sorbhag, under the All India Coordinated Research Project and later under Jute Agricultural Research Institute, Barrackpore (WB).
	Parentage with details of its pedigree	The variety R-67-34 is the result of the clonal selection from an exotic type E-50-76. The variety R-67-34 is now well - adapted to Indian Conditions and has performed better as far as the fibre yield is concerned.
	Area of Adaptation	Suitable for Ramie cultivated areas of North East Regions of India.
	Description of variety :	
	(a) Canes	Produces large number of canes depending upon the fertility of the soil and vigour of rhizomes.
	(b) Morphological characters	It is busy type of having broad ovate leaves. The leaves are serrated and are 100 to 150 mm. long with a broadness of 50 to 100 mm. The stipule and mid rib of leaf under surface is light pink. The petiole is pinkish.
	(c) Maturity	During second year of planting the harvesting can be started.
	(d) Reaction to diseases and pests	No major attack of any disease or pests has been found in this variety.
	(e) Agronomic features	After the land preparation is done properly, the planting can be attempted during July - September, depending upon the local conditions. Normal recommendation method of planting is followed. A dose of N_{20} P_{10} and K_{10} Kg/ha. may be applied after 2 to 3 months of planting. Staging back is done in the second year and thereafter the regular harvesting can be attempted.
	(f) Fibre quality	Fibre quality is at par with R-1452.
	Agency responsible for maintaining of breeder's stock	Ramie Research Station (I.C.A.R.) Sorbhog (Assam).

13.	Name of the Crop	Brinjal (*Solanum-melongena* L.)
	Name of the variety	Pant Rituraj (PBR-91-2)
	Institution or agency responsible for developing the variety.	G.B. Pant University of Agriculture & Tech. Pantnagar (UP).
	Parentage with details of its pedigree	T-3 × Pusa Purple cluster
	Specific area of adaptation	All India
	Description of the variety	
	(a) Distinguishing morphological characters	Semi-erect plant, green foliage with occasional light purple colour on new leaves, deep purple colour almost round fruits with slight tapering towards fruit bottom.
	(b) Plant height	60-80 cm.
	(c) Maturity	60 days to first picking

(d) Duration of availability of produce and possibility of extending the crop period	About 3 nonths in rainy seasons and 2 months in spring summer seasons.
(e) Reaction to major diseases	Field resistant to bacterial width.
(f) Reaction to major pests	No systematic screening has been done.
(g) Agronomic features	It gives better performance at 75 × 60 cm spacing with 100 kg N—ha.
(h) Seasons for which recommended	Rainy and spring/summer season.
(i) Keeping-storage quality	Good
(j) Transfer tability	Good
(k) Texture and flavour	Soft and less seeded Good.
(l) Quality of produce including nutritive value	Comparable with T-3 for most of the components, has more of anthocyanin and better coloured fruits.
Agency responsible for maintaining breeder seed	GB, Pant University of Agril. & Tech. Pantnagar (UP)

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14. Name of the crop	Tomato (*Lycoparsicon esculentum* Mill)
Name of the variety	Pant Bahar (AC-238)
Institution or agency responsible for developing the variety	Department of Horticulture, GB Pant University of Agril. & Tech. Pantnagar Distt., Nainital-263 145.
Parentage with details of its pedigree	AC-238 is a selection from germplasm lines maintained as Horticultural Research Centre, Pant Nagar. It is suitable for both autumn-winter as well as spring summer season in the plains. Resistant to verticillium and fusarium wilt diseases.
Description of the variety	
(a) Distinguishing morphological characters	Plants are busy, indeterminate, stem round medium thick, pubescent, leaf petiole has purple pigment in young stage, buds pubescent, fruits medium sized flatish round, lightly ribbed having uniform red colour.
(b) Maturity from sowing/transplanting to 50% of fruit harvest	75-78 days after transplanting in winter season.
(c) Period of harvest and possibility of extending the harvesting cropping period.	Period of harvest is 40 days in winter season and 20 days in summer season Cropping period can be extended by 30 days in winter season and about 15 days in summer season.
(d) Reaction to major diseases in the field and also under controlled conditions	Verticillium and Fusarium wilt resistant under natural inoculum in the field.
(e) Reaction to major pests	No specific screening has been done. However, no severe damage of any specific pest has been observed as in case of existing standard control varieties
Agency responsible for maintaining breeder's stock	G.B. Pant Krishi, Evam Praudyogik Vishwa Vidyalaya, Pantnagar.

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15. Name of the Crop	Gram (*Cicer arietinum* L.)
Name of the variety	**Pusa-244 (BG-244)**
Institution or agency responsible for developing the variety	Division of Genetics, Indian Agricultural Res. Institute, New Delhi-110012
Parentage with details of its pedigree	The variety has been evolved from a triple cross, (850-3/27 × P 922) × 9847 having two desi types and one Russian Kabuli type in its parentage. Thy pedigree method of selection was used for handling this cross in the earls segregating generations. A large number of promising homozygous line, emanating from this cross were later on tested in the institute trials at Delhi Sirsa and Kanpur. BG 244, which gave the best results among these lines was promoted to All India Coordinated Trials in 1980-81.
Specific area of its adaptation	Adapted for cultivation both under rainfed and irrigated conditions in the States of Madhya Pradesh, Rajasthan and Gujarat.
Description of the variety	
(a) Plant height	Ranges from 36-58 cm depending upon the locations and ecological conditions.
(b) Distinguishing morphological characters	This variety is semi-spreading to upright in growth habit. The stem is round. Leafiets are distinctly broader than C 235, H 208 and Pusa 209. Foliage is dark green in colour.
(c) Maturity (range in number of days) seeding/transplanting to flowering/seed to seed	This variety takes 110 to 120 days for seed to seed.

	(d) Reaction of major diseases in field and also under controlled conditions (reaction to physiological strains/races/biotypes to be indicated whatever possible.)	BG 244 showed multiple field resistance to many diseases including wilt stem rot, root rot, *Ascochyta* blight and stunt during the last two years. During 1982-83, BG 244 was rated as 0, 0 9, 0 5 and 2 at Raipur, Junagarh, Morena and Bharari respectively as against 0,2, 0, 1.2 and 3·0 for JG 315 which is a wilt resistant variety. During 1983-84, BG 244 was rated as 3, 3 and 4 for wilt, stem rot and root rot respectively at Akola. For both blight and stunt, it was scored as 1 against 9 and 3 of local at Jabalpur.
	(e) Reaction to major pests (in field conditions in controlled conditions including pests of storage)	For pod borer, BG 244 was found to be moderately resistant.
	Agency responsible for maintaining breeder's stock	The Division of Genetics, IARI, New Delhi takes up responsibility of maintaining breeder's seed on continual basis.

16.	Name of the Crop	Gram (*Cicer arietinum* L.)
	Name of the variety	Pusa 256 (BG 256)
	Institution or agency responsible for developing the variety	Division of Genetics, Indian Agricultural Res. Institute, New Delhi-110012.
	Parentage with details of its pedigree	The variety has been evolved from a double cross,(JG62 × 850-3/27) × (L550 × H208), involving three desi and one kabuli types. Segregating generation were handled by pedigree method of selection. A large number of promising homozygous lines originating from this cross were tested in the institute trials at Delhi, Sirsa and Kanpur. BG256, which gave the best yield performance among these lines, was promoted to All India Coordinated Trials in 1981-82.
	Specific areas of adaptation	Adapted for cultivation under rainfed and irrigated conditions in the States of Uttar Pradesh, Bihar, West Bengal and all other areas where bold seed is preferred.
	Description of the variety	
	(a) Plant height	53 to 58 cm depending upon the location and ecological conditions.
	(b) Distinguishing morpholigical characters	This variety is semi spreading to semi erect in growth habit. Leaflets are distinctly broad, ovate with dark green colour. Stem is round and thick.
	(c) Maturity (range in number of days) seeding/transplanting to flowering seed to seed	BG 256 takes 135 to 145 days from seed to seed.
	(d) Reaction of major diseases in the field and also under controlled conditions (reaction to physiological strains/races/biotypes to be indicated whatever possible.)	BG 256 was tested against wilt, stunt and *Ascochyta* blight alongwith other varieties during 1982-83 and 1983-84. In both the years, BG 256 has shown moderately resistant to resistant reaction for these diseases. During 1982,-83, BG 256 was rated as 0, 1, 2, 1.0 R and R at Masodha, Sabour, Kanke, Bhubaneswar, Nawabganj and Bareily, respectively for wilt as aganist 0, 1, 2, 1.3 MR and MR of C235 at these locations. In the subsequent years BG 256 again showed better resistance to wilt than the check variety.
	(e) Reaction to major pests (in field conditions and in controlled conditions including pests of storage)	For pod borer, resistance of BG 256 was of the same level as other varieties.
	Agency responsible for maintaining breeder's stock	The Division of Genetics, IARI, New Delhi takes up responsibility of maintaining breeder's seed on continual basis.

ANNEXURE III

Important features of the Varieties recommended for Notification in the 3rd Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop : Wheat
   Variety : Tawa-267
   Parentage : Bb × 7c
   Year of release : 1979
   Breeder/Institute responsible for maintaining the breeder's stock : Jawaharlal Nehru Krishi Vishwa Vidyalaya, Zonal Agricultural Research Station, Powerkheda.
   Description of the Variety : (1) Plant height : 65-90 cm
   (2) Stem & foliage : Plant type erect, straw thick neck half crooked, tillering good, dark green medium early in maturity.
   (3) Fusiform compact, fully awned glumes, smooth, light, brown, mid long mid wide.
   Seed Characters : Seed colour Amber, lustrous, Seed shape Medium bold semi hard.
   Seed weight : 1000 grain weight 41 gms. Quality protein 12.26·10
   Two identifiable and distinguishing morphological characteristics : Neck half crooked, ears long light brown.
   Yield (a) Commercial : 40 Q/ha.
   (b) Seed : 30 Q/ha.

2. Crop : Sorghum
   Variety : S.B. 905
   Year of release : 1982
   Parentage : S.B. 905 is a selection from an out cross in Kalagonda which is local variety in the Northern parts of Karnataka.
   Breeder/Institute responsible for maintaining the breeder's stock : Sorghum Breeder, AICSIP, Dharwad Campus, University of Agri. Sciences, Bangalore-65.
   Description of the variety : The variety grows to an height of 200-220 cms it matures in 120-125 days in kharif.
   Two identifiable and distinguishing morphological characteristics. : Thick stem, Tan in reaction, the leaves are 11-13 in number. The earheads are cylindrical and slightly tapering towards the tip.
   Yield (a) Commercial : 30-35 qtls/ha. which is 96 percent of the yield of CSH-1 in grain and double the yield of CSH-1 in fodder.

3. Crop : Sorghum (*Sorghum bicolor*)
   Variety : SPV 245
   Year of Release : Identified for release in 1980
   Parentage : The variety has been developed from the cross SB 1066 × CS 3541
   Breeder/Institute responsible for maintaining the breeder's stock. : Sorghum Breeder, Sukhadia University of Udaipur.
   Description of the variety : (a) Plant height : 160–190 cms
   (b) Morphological characters
   (i) Stem thickness : Medium
   (ii) Pigment on Plant : No
   (iii) Leaf colour : Dark green
   (iv) Leaf size : Medium

(v) Leaf position : Semi erect
(vi) Ear head shape : Oval
(vii) Peduncle : Short
(viii) Ear head compactness : Compact
(ix) Glume colour : Straw
(x) Glume size : Short
(xi) Seed colour : White pearly
(xii) Seed size : Medium
(xiii) 1000 grain weight : 25—27 gms
(xiv) Seed shape : Round

Two identifiable morphological characteristics of the variety : Plant type (All the locals are of normal plant type)
Leaf position is semi erect but upper 2—3 leaves are more erect.
Compact ear head, little flattened and open at the top (none of the released variety has this type)

Maturity : Days to flowering : 65—75 days
Days to maturity : 100—105 days

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4. Crop : Sorghum
Variety : SPV 96
Year of Release : Identified for release in 1979
Parentage : Isolated from cross (148 × 512) Secondary selections were done for height and standability under drought.
Breeder/Institute responsible for maintaining the breeder's stock : Sorghum Breeder, Sukhadia University Udaipur.
Description of the variety : (i) Plant height : 150-160 cm.
Distinguishing morphological characreters
(i) Leaf : Medium broad, light green, tan.
(ii) Stem : Medium thick, juicy internodes fully enclosed in leaf sheath.
(iii) Earhead : Semi compact, cylindrical, well exserted, medium thick peduncle.
(iv) Glume : Medium sized and straw coloured
(v) Seed : Bold (27.0 to 20.0 g/1000 grains) spherical, white pearly in colour.
Two identifiable and distinguishing morphological characteristics : Leaves are medium broad, tan and light green in colour. Medium thick and juicy stem semi compact, cylindrical well excerted ear head, with thick peduncle.
Maturity : Days to flowering : 53 to 58 days
Days to maturity : 85-90 days

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5. Crop Paddy
Variety : BK-79
Year of Release : 1983
Parentage : Taichung Native 1 (NP 130)/Basmati 370
Breeder/Institute responsible for maintaining the breeder's stock : Agriculture Research Banswara & Kota
Description of the variety
(a) Plant height : 82-85 cm
(b) Plant characteristics : BK(-)79 possesses ideal plant characteristics such as short stature, uprigh leaves, synchronized tillering & late leaf sensence.
(c) Maturity (Days)
Flowering : 95-100
Maturity 125-130
Two identifiable & morphological characteristics of the variety : (i) Short stature, early maturity in comparison to Basmati 370.
: (ii) The panicles are compact, long and fully exserted with brownish colour at flowering stage. It has got very long slender grains.
(iii) Plant parts are non pigmented except light brownish panicles unlike other high yielding varieties.

6. Crop	:	Paddy
Variety	:	VL Dhan 206
Year of release	:	1983
Parentage		VL Dhan 206 is a pure line selection from a local type Bamni.
Breeder/Institute responsible for maintaining the breeders' stock	-	Vivekananda Parvatiya Krishi Anusandhan Shala. Almora (UP)
Description of the variety	:	The plants are medium tall with medium tillering ability, light green foliage good panicle exsertion and medium sized grain. It takes about 165 days to mature.
Two identifiable and distinguishable morphological characteristics of the variety	:	(i) Medium grain with light yellow colour husk (ii) Light green foliage.

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7. Crop	:	Paddy
Variety	:	VL Dhan - 16
Year of release	:	1984
Parentage	:	J.P. 5×Y.R.L.-1.
Breeder/Institute responsible for maintaining breeders' stock		Vivekananda Parvatiya Krishi Anusandan Shala, Almora, UP
Description of the variety		The plants are semi tall with medium tillering ability. The foliage is light green. The plant is compact with stiff straw. The panicle is long and compact with good spikelet fertility. The seed and apiculous are straw coloured with red kernal.
Two identifiable and distinguishing morphological characteristics of the variety	:	(i) The foliage colour is light green. ii) Grain and apiculous colour are straw coloured with red kernal.

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8. Crop	:	Barley
Variety	:	VL Barley-1
Year of release	:	1984
Parentage	:	NP 109×HBL 62
Breeder/Institute responsible for maintaining the breeder's stock	:	Vivekananda Parvatiya Krishi Anusandhan Shala, Almora (UP)
Description of the variety	:	The plants are medium tall with dark green foliage. The basal portion of the stem and awns are light purple in colours. Grains are hulled with yellow colour. It takes about 177 days to mature.
Two identifiable and distinguishable morphological characteristics	:	(i) Basal colour of the stem is light purple. (ii) Awn colour is purple.

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9. Crop	:	Dharaf (*Chrysopogon*)
Variety	:	Dharaf GAU-D-1
Year of release	:	1979
Parentage	:	Chrysopogon mentanus (Perenial type Dharaf)
Breeder/Institute responsible for maintaining the breeders' stock	:	Grassland Research Station, Gujarat Agril. University, Dhari (Distt. Amreli)
Description of the variety	:	Variety Gujarat Dharaf-1 belongs to Genus "Chrysopogon" characterising filliform spikelets in threes; joint branch of Penicles bearing central one sessil and fertile while lateral are stalked and sterile. The culmas of the variety are slander and glabrous while leaves are dark green, with compressed sheath. The leaves are broader and longer than both the checks varieties. Penicle bears group of spikelets consisting sessil and bisexual and are awn to awnless. The plant height is comparatively longer in the released variety with better rooting pattern reaching upto 60 cms. soil depth. The flowers are pale yellowish in colour.
Two identifiable and distinguishable morphological characteristics of the variety	:	(1) The leaves are broader and longer than other variety (2) The plant height is comparatively longer with better rooting pattern reaching upto 60 cm. soil depth.

10. Crop : Soyabean (*Glycine max.*)

Variety : VL Soya-1

Year of release : 1982

Parentage : VLS 1 is spontaneous mutant with black seed coat colour isolated from a population of Bragg.

Breeder/Institute responsible for maintaining the breeder's stock : Vivekananda Parvatiya Krishi Anusandhan Shala, Almora (UP)

Description of the variety : Plants are medium tall with determinate growth habit. Trifoliate leaves are dark green in colour. Seed coat colour is black and the maturity period is about 113 days.

Two identifiable and distinguishable morphological characteristics of the variety : (i) Tawny pubescence (ii) White flowers and (iii) Black seed coat.

11. Crop : Cotton (*Gossypium hirsutum* L.)

Variety : F-286

Year of Release : 1983

Parentage : F 414 × Empire 61 WE

Breeder/Institute responsible for maintaining the breeder's stock : Senior Cotton Breeder, Faridkot/Punjab Agricultural University

Description of the variety : F 286 is an early maturing, high yielding and semi-sympodial plant type variety with 3-5 monopods per plant. The plant height about 150 cm with 25-30 bolls per plant. The average boll weight is 3.14 g. It is somewhat more tolerant to the attack insect pests and disease and gives about 12 per cent more yield than F 414. The new variety possesses superior fibre qualities and gives better spinning performance.

Two identifiable and distinguihable morphological characters of the variety :
(i) Semi-sympodial with 3-5 monopods and medium big bolls.
(ii) Early maturing with good opening of the bolls.

12. Crop : Lesser yam (*Dioscora esculenta*)

Variety : De-11

Year of release : 1982

Parentage : A Selection

Breeder/Institute responsible for maintaining the breeder's stock : Central Tuber Crops Research Institute, Sreekariyam. Trivandrum-695 017

Description of the variety : *Morphological characters:*

(a) Height (length of vines) : Vine, twin-2.5 to 3.0 metres
(b) Plant type : Vine, twining on support, twining to the left.
(c) Stem (i) young : Palegreen.
(ii) mature : Dark brown, small prikle present
(d) Mean internode length : 9.0 cm
(e) Petiole : Swollen at both ends brownish green
(f) Leaves : Lamina single, entire cordate
(g) Flowering : Not observed

Tuber characters :

(a) Number of tubers/plant : 20-25
(b) Average length of tubers : 13.5 cm
(c) Average girth of tubers : 12.2 cm
(d) Tuber shape : Oblong to fusiform
(e) Skin colour : Greyish brown
(f) Tuber surface : Partly hairy
(g) Flesh colour : Creamish white
(h) Yield of tuber/plant : 2-3 kg
(i) Texture on cooking : Smooth
(j) Taste : Good

Duration of the crop : 220-240 days from planting to harvest

Two Identifiable and distinguishable morphological characteristics of the variety :
(1) Mature stem (vine) dark brown
(2) Skin colour of tuber Greyish brown.

13. Crop Sorghum

Variety : CO.21

Year of release : 1977

Parentage : Tall mutant from 699 dwarf.

Breeder/Institute responsible for maintaining the breeder's stock : School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3

Description of the variety :
(1) Tall (175-200 cm)
(2) Long Broad leaves
(3) Medium, compact oval shaped earheads.
(4) Pearly white bold grains
(5) Matures in 100-105 days
(6) Dull white mid rib.
(7) Tan plant type.

Two identifiable and distinguishable morphological characters of the variety :
(i) Oval shaped medium compact earheads.
(ii) Long broad leaves with dull white mid rib.

14. Crop : Sorghum

Variety : CO.22

Year of release : 1978

Parentage : A derivative of a multiple cross involving four elite parents 2077A, 3660A, 2219A and CS 3541.

Breeder/Institute responsible for maintaining the breeder's stock : School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.

Description of the variety :
(1) Long medium compact earhead spindle shaped.
(2) Dull white mid rib.
(3) Pealty white grains
(4) Early/maturing (85-90 days)

Two identifiable and distinguishable morphological characters of the variety :
(1) Long spindle shaped semi compact. earheads
(2) Early maturity (80-85 days)

15. Crop : Greengram

Variety : CO.2

Year of release : 1973

Parentage : Pureline selection isolated from PLS. 365.

Breeder/Institute responsible for maintaining the breeder's stock : School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.

Description of the variety : Plants are erect and dwarf in stature, 35-40 cm tall. Stem and leaves are green. Pods are green with purple wash at the upper suture. At maturity, pods turn black. Seeds are medium and green in colour. The maturity duration is 60 days from seed to seed.

Two identifiable and distinguishable morphological characters of the variety :
(i) Erect and dwarf statured (35-40 cm)
(ii) Pods are green with purple wash at upper suture.
(iii) Seeds are medium and green.
(iv) Maturity duration is 60 days.

16. Crop : Greengram

Variety : CO.3

Year of release 1976

Parentage Pureline selection from PLS. 367.

Breeder/Institute responsible for maintaining the breeders's stock	:	School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.
Description of the variety	:	Plants are erect and short statured (35-45 cm) with compact branching. Stem and leaves are green. Pods are green, grains are shiny green and medium in size. The maturity duration is 65-75 days.
Two identifiable and distinguishable morphological characters of the variety	:	(i) Erect and short statured (35-45 cm) (ii) Seeds are medium and shiny green (iii) Maturity duration ranges from 65 to 75 days.

17.	Crop	:	Redgram
	Variety	:	CO.2
	Year of release	:	1974
	Parentage	:	Pureline selection from Accn. No. 4728
	Breeder/Institute responsible for maintaining the breeder 's stock	:	School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.
	Description of the variety	:	Plant is short statured (90-100 cm) with compact and erect body, bearing pods in terminal clusters. Leaflets are dark green and broad. Pods are green with brown streaks. Pods turn brown at maturity. Seeds are bold and brown in colour. Maturity duration is 115-120 days.
	Two identifiable and distinguishable morphological characters of the variety	:	(i) Short statured (90-100 cm) (ii) Terminal cluster (iii) Pods green with brown streaks. (iv) Seeds bold and brown. (v) Maturity duration is 115-120 days.

18.	Crop	:	Redgram
	Variety	:	CO.3
	Year of release	.	1977
	Parentage	:	Induced mutant from CO.1 through EMS 0.6% treatment.
	Breeder/Institute responsible for maintaining the breeder's stock	:	School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.
	Description of the variety	:	Plants are erect, bushy, compact growing upto 110 cm with determinate habit. Stem is green with purple wash at axles. Leaflets are medium and dark green in colour. Pods are green with purple streaks. Seeds are medium round, and reddish brown. The maturity duration is 130 days.
	Two identifiable and distinguishable morphological characters	:	(i) Bushy compact and erect plant. (ii) Terminal cluster and pods are green with purple streaks. (iii) Seeds medium and reddish brown. (iv) Maturity duration is 130 days.

19.	Crop	:	Lab-lab
	Variety	:	CO.8
	Year of release	:	1972
	Parentage	:	A derivative from the cross between CO.5 and DL.3196.
	Breeder/Institute responsible for maintaining the breeder's seed stock	:	School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.
	Description of the variety	:	Plants are short, erect and non trailing. Stem and leaves are green. Flowers are white. Pods are greenish white, tubular, slight curved. Seeds are small and chocolate brown in colour.
	Two identifiable and distinguishable morphological characters of the variety	:	(i) Short, erect and bushy status (ii) White flower (iii) Greenish white tubular slightly curved pods. (iv) Small, chocolate brown seeds.

Proceedings of the Fourth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 20th August, 1985 under the Chairmanship of Dr. M. V. Rao, Dy. Director General (CS), ICAR, New Delhi

The list of the participants is attached as Annexure I.

2. The Chairman welcomed the members and informed about the recent developments in revaluation of the release process of the varieties vis-a-vis recommendations of the Dr. Norman E. Borlaug's Committee. He mentioned that timely availability of the scientific and reliable data from minikit and adaptive trials had been an inhence problem of the present system. To overcome this situation, certain new steps have been suggested which includes availability of the minimum quantity of the breeder seeds at the time of recommendations of the variety by Workshop, increase of the test stocks at SFCI farms, timely packing and despatch of the minikits to the testing sites and active involvement of the concerned agencies in conducting the minikit and adaptive trials and timely submission of the information. He further mentioned that the suggested steps would be further discussed in the coming Wheat Workshop and after finalisation, they would be circulated for adoption by all concerned to make the release process more scientific and practical. (This has since been done by Dr. P. V. Shenoi, Additional Secretary when Sh. M. Subramanian, Secretary Agriculture (A&C) was in the chair on 25-8-85).

3. Dr. K.P.A. Menon, Chairman and Managing Director, National Seeds Corporation suggested that there should be a provision under which an obsolete variety could be withdrawn from the certified seed production programme. It would discourage the cultivation of a variety which has become susceptible to the disease and pests. He further suggested that the production and distribution of labelled seeds should be systematically discouraged and production and distribution of certified seeds be encouraged so that the market could be flooded with certified seeds. The easy availability of certified seeds at a reasonable price would automatically discourage the production and distribution of labelled seeds. He further suggested that public institutional agencies should invariably be asked to produce only certified seeds.

4. During discussions of the various proposals, the following important points emerged:

(i) breeder seeds should invariably be supplied by the breeders in the form and manner specified by the Govt. of India vide their memorandum No. 18-5/82-SD dated 23-4-82. It would facilitate the certification agencies to authenticate the source of supply and also insulate the system from misutilisation by unscrupulous seed producers;

(ii) the varieties of forage/grasses should also be tested under minikit and adaptive trials. Commissioner, Animal Husbandry, might draw a suitable programme to conduct these tests at suitable locations;

(iii) Minimum Seed Certification Standards for the crops like Buffel grass and Birdwood grass might be specified so that the seeds of the notified varieties of these crops could be offered for certification. Central Arid Zone Research Institute, Jodhpur, might be contacted for supply of the draft Minimum Seed Certification Standards;

(iv) The Project Coordinator may critically examine the pollen shedder problem in the female parent of X-5 and PHB-47. The seed producing agencies of these hybrids might also inform the DDG (CS), ICAR, and Dy. Secretary (Seeds), Deptt. of Agriculture and Cooperation about flowering period of the seed production crop in ensuing season so that the problem of pollen shedders could be examined by various experts in the field itself; and

(v) Dy. Director General (CS), ICAR, might send a DO letter to the APCs/Secretary (Agriculture) of all the States/UTs with suggestion to bring about improvement in the release process of varieties at State level so that the good varieties could be released without any delay but inferior varieties are withheld at release stage itself. They may ask for the data from The All India Coordinated Crop Improvement Project or invite the Coordinators while taking decisions on release of varieties.

5. At the time of the discussion of the release proposal of Toria Variety PT-303, Dr. Yadav, Project Director (Oilseeds), raised some basic questions about the authenticity of the data submitted in support of release proposal of the variety. He mentioned that the comparison made in the release proposal is not valid and the days of maturity indicated in Table No. 4 are not correct. He also mentioned that Toria could be divided into two groups as far as days to maturity are concerned i.e. in early and late groups. He further mentioned that Toria T-9 belongs to early group while PT-303 should be placed in late group and thus testing of the PT-303 vis-a-vis T-9 is not scientifically correct. After checking the data it was found that the difference between maturity between T-9 and PT-303 was negligible.

6. After this, the regular agenda was taken up for discussion and the position in respect of each item is indicated below:

Item No. 1 : Confirmation of the minutes of the third meeting of the Central sub-committee on Crop standards, notification and release of varieties held on 25th March, 1985.

The minutes of the earlier meeting were confirmed.

Item No. 2 : Review of action taken on minutes of the third meeting of the Central Sub-committee on Crop standards, notification and release of varieties.

The position indicated in the agenda notes was noted by the sub-committee/participants.

Item No. 3 : Consideration of proposals for release

42 proposals of varieties of different crops were evaluated for release. The observation of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated as under :

I. Details of the varieties recommended for release and notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	Kundan (DL-153-2)	(i) Recommended for release for cultivation under rainfed and limited inputs in the states of Punjab, Haryana, U.P., Rajasthan and Jammu & Kashmir. (ii) Recommended for notification for entire country.
2.	Wheat	HUW-213 (Malaviya Wheat-213)	(i) Recommended for release for cultivation in North Eastern Plains Zone under late sown, medium to high fertility irrigated conditions. (ii) Recommended for notification for entire country.
3.	Wheat	CPAN-1796	(i) Recommended for release for cultivation in entire Northern Hills Zone under both timely sown, irrigated good fertility and timely sown low fertility rainfed conditions. (ii) Recommended for notification for entire country.
4.	Wheat	HW-741	(i) Recommended for release for cultivation in Southern hills of India. (ii) Recommended for notification for entire country.
5.	Wheat	HD-2327	(i) Recommended for release for cultivation in Central Zone comprising Kota and Udaipur divisions of Rajasthan, Bundelkhand area of Uttar Pradesh Surat and Bulsar District and Kathiawar region of Gujarat, whole of Madhya Pradesh (Except Surguja, Bilaspur, Durg, Raipur, Baster, Mandla Sidhi, Rajanandgaon, Raigarh, Shahdol, Bhind, Dharmayeajagarh, Gwalior and Morena Districts) (ii) Recommended for notification for entire country.
6.	Wheat	HD-2307	(i) Recommended for release for cultivation under late sown high fertility irrigated conditions of North Eastern Plains Zone (Eastern Uttar Pradesh, Bihar) (ii) Recommended for notification for entire country.
7.	Wheat	HD-2285	(i) Recommended for release for cultivation in Northern Plains Zone (Punjab, Plains of Jammu, Delhi, Western U.P., Eastern Haryana (Ambala, Karnal, Sonepet, Kuruksheshtra districts) Alwar, Bharatpur and Sriganganagar districts of Rajasthan and Gwalior, Bhind and Morena districts of Madhya Pradesh. (ii) The variety has already been notified vide S.O. No. 596 (E) dated 13th August, 1984.
8.	Wheat	HD-2278	(i) Recommended for release for cultivation in Peninsular Zone (Maharashtra, Karnataka, Goa, Western Andhra Pradesh and plains of Tamilnadu). In addition to the Central Zone (Kota and Udaipur divisions of Rajasthan, Bundelkhend area of U.P., Baroda, Broach, Kaira, Panchmahal, Surat and Bulsar Districts and Kathiawar region of Gujarat, whole of MP (except Surguja, Bilaspur, Durg, Raipur, Bastar, Mandla, Sidhi, Rajnandgaon. Raigarh, Shahdol, Balaghat, Bhind, Dharmayeajagarh, Gwalior and Morena Districts). (ii) The variety has already been notified vide S.O. No. 596(E) dated 13th August, 1984.
9.	Bajra	ICMS-7703	(i) Recommeded for release for cultivation in all the millet growing areas of India. (ii) Recommended for notification for entire country.
10.	Sorghum	Rajasthan Chari-2 (SU-45)	(i) Recommended for release for cultivation in all the Forage Sorghum growing tracts as an early type. However, its forage yield and quality are much better expressed in Rajasthan, Maharashtra, Delhi and Gujarat. (ii) Recommended for notification for entire country.
11.	Ground nut	Chitra (MA-10)	(i) Recommended for release for cultivation in the groundnut growing regions of the states Punjab, Haryana, Bihar; Rajasthan and Uttar Pradesh. (ii) Recommended for notification for entire country vide S.O No. 540(E) dated 24-7-85.

1	2	3	4
12.	Groundnut	Kadiri-3	(i) Recommended for release for cultivation in Kharif season in entire country. For Rabi/Summer season recommended for cultivation only for Zones-II (Gujarat & Southern Rajasthan comprising the districts of Chittorgarh, Udaipur and Jhalawar) and zone V (Entire Karnataka State, entire Andhra Pradesh excluding Srikakulam & Visakhapatnam districts and Southern Maharashtra comprising the districts of Satara, Sangli, Solapur, Kolhapur, Osmanabad and Nanded.) (ii) The variety has already been notified vide S.O. No. 470 dated 19-2-1980.
13.	Toria	P.T. 303	(i) Recommended for release for cultivation in Uttar Pradesh, West Bengal, Assam, Haryana, Punjab, Himachal Pradesh and Orissa. (ii) Recommended for notification for the entire country.
14.	Mustard	Vaibhav (RK-1418)	(i) Recommended for release for cultivation in the Central Zone comprising Uttar Pradesh and Madhya Pradesh. (ii) Recommended for notification for the entire country.
15.	Mustard	Vardan (RK-1467)	(i) Recommended for release for cultivation in the Central Zone comprising Uttar Pradesh and Madhya Pradesh under irrigated conditions. (ii) Recommended for notification for the entire country.
16.	Bengal Gram	Pusa-408	(i) Recommended for release for cultivation under rainfed and irrigated conditions prevailing in the agroclimatic regions of Punjab, Haryana, Delhi, Rajasthan and U.P. (ii) Recommended for notification for the entire country.
17.	Bengal gram	Pusa-413	(i) Recommended for release for cultivation under rainfed and irrigated conditions prevailing in the agroclimatic regions of U.P., Bihar and West Bengal. (ii) Recommended for notification for entire country.
18.	Bengal gram	Pusa-417 (Girnar)	(i) Recommended for release for cultivation under rainfed and irrigated conditions prevailing in central zone i.e. Gujarat, M.P. and Maharashtra. (ii) Recommended for notification for the entire country.
19.	*Arhar*	Pusa-84	(i) Recommended for release for cultivation in North-west region particularly for pre-monsoon sowing. (ii) Recommended for notification for the entire country.
20.	*Arhar*	Manak (H 77-216)	(i) Recommended for release for cultivation in whole of Haryana where one/two irrigations are available. (ii) Recommended for notification for the entire country.
21.	Buffel grass	Marwar Anjan (CAZRI-75)	(i) Recommended for release for cultivation in arid and semi arid areas of the country. (ii) Recommended for notification for the entire country.
22.	Birdwood grass	Marwar Dhaman (CAZRI-76)	(i) Recommended for release for cultivation in arid and semi arid areas of the country. (ii) Recommended for notification for the entire country.
23.	Frenchbean	VL Bauni Bean-1	(i) Recommended for release for cultivation in the hills of Uttar Pradesh, Himachal Pradesh and Jammu and Kashmir. (ii) The variety has already been notified vide S.O. No. 13 dated 19-12-78.
24.	Sweet Potato	Rajendra Shakarkand-5	(i) Recommended for release for cultivation in Plains of Northern India particularly of Bihar. (ii) Recommended for notification for the entire country.
25.	Tomato	Punjab Chhuhara	(i) Recommended for release for cultivation throughout the country. (ii) The variety has already been notified vide S.O. No. 13 dated 19-12-78.

1	2	3	4
26.	Cotton (*Gossypium arboreum*)	DS-1	(i) Recommended for release for cultivation in the entire State of Haryana. (ii) Recommended for notification for the entire country.
27.	*Moong*	Pant Moong-3	(i) Recommended for release for cultivation in North West Plain Zone of the country for the Kharif season. (ii) Recommended for notification for the entire country.
28.	Scarlet Linum	Meera	(i) Recommended for release for growing as an ornamental crop (ii) Notification under Seeds Act is not required.

The details of the important features of the above varieties is given in Annexure II.

II. Details of the varieties wherein sponsoring authorities have been advised to re-submit the proposals with additional information is indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Lesser yam	Da. 11	(i) The required number of copies of the proposal were not received and hence proposal was withdrawn from the Agenda Notes of the 4th Meeting. (ii) The Sponsoring Authority is advised to submit the desired number of copies of the proposal so that it could be included in the next meeting.
2.	Sorghum	S-171	(i) The variety might be tested against the varieties recommended for release during last three years and proposal might be re-submitted incorporating the results vis-a-vis the new varieties of forage sorghum. (ii) The sponsoring authority might also obtained the views of the Project Coordinator and submit the same alongwith the proposal. (iii) After receipt of the proposal the Chairman of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties would take decision about the release/notification of the variety.
3.	Barley	Karan-3	(i) The varieties should be tested vis-à-vis the latest barley varieties recommended for the same zone. (ii) The comparison of the barley varieties against wheat varieties is not very scientific and would not provide proper parameters to evaluate the varieties. Hence, the varieties should be tested against latest barley varieties recommended for the zones for which the proposed varieties are likely to be considered for release. (iii) The data of adaptive and minikit trails after ***thorough*** testings of the proposed varieties might be submitted. (iv) The proposal might be re-submitted to the Central Sub-Committee on Crop Standards, Notification and Release of varieties after completion of the above suggested trials.
4.	Barley	Karan-16	
5.	Barley	Karan-18	
6.	Barley	Karan-19	
7.	Barley	Karan-280	
8.	Groundnut	Jawan	(i) Data pertaining to the performance of the variety vis-a-vis Kissan might be submitted in the form of comparative statement for various quality attributes. (ii) The views of the Project Director about the variety might be obtained and submitted alongwith the proposal. (iii) The Chairman of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties would decide the release and notification of the variety after receipt of the above information.

1	2	3	4
9.	Brinjal	ARU-1	(i) The performance of the variety under coordinated trials including field data might be submitted. (ii) After receipt of the above information from the sponsoring authority, the Chairman of the Sub-Committee would decide the release/notification of the variety.
10.	Pea	Punjab-88	(i) The variety might be tested against the standard check of vegetable pea variety of the same maturity group i.e. Bonneville. (ii) The proposal might be re-put up alongwith the data for consideration of the Central Sub-Committee on Crop Standards-Notification and release of varieties.
11.	Musk-melon	. Punjab Hybrid	(i) The proposal might be re-put up for the consideration of the Sub-Committee alongwith the yield data vis-a-vis standard check.
12.	Onion	Punjab Selection	(i) The proposal might be re-put up for the consideration of the Sub-Committee alongwith comparative data for different years vis-a-vis standard check.
13.	Onion	Punjab-48	(i) The proposal might be re-put up for the consideration of Central Sub-Committee on Crop Standards, Notification and release of varieties alongwith comparative data for different years vis-a-vis standard check.
14.	*Urd* (Black gram) . . .	Pragati	(i) The data pertaining to All India Co-ordinated trials and the recommendations of All India workshop might be submitted. (ii) After the receipt of the same Chairman of the Central Sub-Committee on Crop Standards, Notification and release of varieties would decide its release/notification.

Item No. 4 : Consideration of the proposal for notification under Section 5 of the Seeds Act.

I. Details of the vareities recommended for notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	GW-120	Recommended for notification for entire country.
2.	Wheat	GW-405	—Do.—
3.	Bajra	PHB-47	—Do.—
4.	Sorghum	Gujarat Jowar-9	—Do.—
5.	Maize	Partap-1	—Do.—
6.	Berseem	BL-10	—Do.—
7.	Groundnut	Kissan (OG-1-13-3)	—Do.—
8.	Raya	RLM-619	—Do.—
9.	Sweet clover (Senji)	YSL-106	—Do.—
10.	Paddy	Puduvai Ponni (Py-1)	—Do.—
11.	Paddy	Punithavathy (Py-2)	—Do.—
12.	Paddy	Manhar	—Do.—
13.	Paddy	Birsa Dhan-101	—Do.—
14.	Bajra	RCB-2	—Do.—
15.	Dolichos Bean . . .	Rajni	—Do.—
16.	Brinjal	Annamalai Brinjal	—Do.—
17.	Chilli	K-1	—Do.—

I. Details of the varieties which could not be recommended for notification. The observation of the Committee is indicated against each variety for further necessary action to be taken by the Sponsoring Authorities

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Wheat	PBW-54	(i) The Committee did not recommend the notification of the variety keeping in view the susceptibility of the variety to various diseases.
2.	Wheat	UP-2121	(i) The sponsoring authority is advised to submit the views of the Project Director about the varieties and their performance under co-ordinated trials. (ii) After receipt of the above information from sponsoring authority, the Chairman of the Sub-Committee would decide the notification of these varieties.
3.	Wheat	UP-2113	
4.	Bajra	GHB-32	(i) The female parent of the hybrid is MS 5141 A, which has become highly susceptible to downy mildew/green ear disease of Bajra and thus Committee did not recommend its notification.
5.	Toria	Toria Ludhiana Composite-1	(i) The sponsoring authority is advised to submit the views of the Project Director/Co-ordinator about the variety and its performance under co-ordinated trials. (ii) After receipt of the above information from sponsoring authority the Chairman of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties would decide the notification of the variety.
6.	Toria	Bhawani (TK-8401)	—Do.—
7.	Chilli	Gujarat Chilli-1	—Do.—
8.	Paddy	Bharathidasan (Py-3)	—Do.—
9.	Paddy	Birsa Dhan-201	—Do.—
10.	Paddy	Birsa Dhan-202	—Do.—
11.	Paddy	Pant Dhan-4	—Do.—
12.	Groundnut	Birsa Groundnut-G	—Do.—
13.	Lentil	Arun	—Do.—
14.	Gram	R.A.U. 52	—Do.—
15.	Ragi	Birsa Marua-1	—Do.—
16.	Ragi	PES-176	—Do.—
17.	Horsegram	VL Gahat-1	—Do.—
18.	Soyabean	PK-416	(i) The sponsoring authority is advised to submit the views of the Project Director about the variety and its performance under co-ordinated trials. (ii) The complete filled in proforma might be re-submitted alongwith the above information.

ANNEXURE

List of the participants who have attended the 4th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 20-8-1985 under the Chairmanship of Dy. Director General (CS), ICAR in Krishi Bhavan, New Delhi

1.	Dr. M.V. Rao, Dy. Director General (CS), ICAR, Krishi Bhavan, New Delhi.	*Chairman*
2.	Dr. K.P.A. Menon, Chairman & Managing Director, National Seeds Corporation Ltd., Beej Bhavan, Pusa Complex, New Delhi-110012.	*Member*
3.	Dr. P.K. Agrawal, Head Divn. of Seed Sciences and Tech., IARI, Pusa, New Delhi-110012.	*Member*
4.	Dr. Munshi Singh, Head Divn. of Genetics, IARI, New Delhi.	*Member*
5.	Sh. H. Narasimha Murthy, Director, Karnataka State Seed Certification Agency, Bangalore.	*Member*
6.	Sh. J.N. Johri, Director, Rajasthan State Seed Certification Agency, Jaipur.	*Member*
7.	Sh. T.P. Yadava, Project Director (Oilseed), Directorate of Oilseeds Research, A.P. Agricultural University, Rajendranagar, Hyderabad.	*Member*
8.	Sh. J.P. Tondon, Project Director (Wheat), All India Coordinated Wheat. Improvement Project, Cummings Laboratory, IARI, New Delhi.	*Member*
9.	Sh. H.L. Trivedi, Director, Gujarat State Seed Certification Agency, Ahmedabad.	*Member*
10.	Sh. Hari Krishna, Director, Seed Certification Agency, Lucknow, UP.	*Member*
11.	Sh. B.N. Sehgal, Chief Seed Certification Officer, Delhi Administration, Delhi.	*Member*
12.	Sh. S. Burra, Dy. Secretary (Seeds), Ministry of Agriculture & Rural Dev., Deptt. of Agriculture & Co-operation, Krishi Bhavan, New Delhi.	*Member-Secretary*

Others

13. Dr. U.B. Singh,
Addl. Director of Agril. Research,
Rajasthan, Jaipur.

14. Sh. V. Subramaniam,
Jt. Director of Agriculture (SSF),
Madras.

15. Sh. Gurdip Singh Josan.
Jt. Director Agriculture (HYUP),
Punjab, Chandigarh.

16. Sh. K.S. Arora,
Jt. Director Agriculture,
Haryana, Chandigarh.

17. Sh. S. Sankaran,
General Manager (Mktg.),
National Seeds Corporation I
Beej Bhavan, Pusa Complex,
New Delhi-110012.

18. Sh. B.M. Sharma,
Jt. Commissioner,
Ministry of Agriculture,
Govt. of India.

19 Sh. S.M.H. Rizvi,
Director (HVP),
Deptt. of Agri. & Coopn.,
Govt. of India.

20. Sh. P.I. Anjaria,
Jt. Director of Agriculture,
Ahmedabad, Gujarat.

21. Sh. N.S. Tunwar,
OSD (QC&T),
Ministry of Agri. & Rural Dev.,
Deptt. of Agri. & Coopn.,
F/118, Shastri Bhavan, New Delhi.

22. Sh. M.S. Shukla,
Dy. S.O., Ministry of Agri. & Rural Dev.,
Deptt. of Agri. & Coopn.,
F/218, Shastri Bhavan,
New Delhi.

ANNEXURE II

The important features of the varieties recommended for release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 4th Meeting held on 20th August, 1985

1. Name of the crop : Wheat (*T. aestivum*)

Name of the variety : Kundan (DL 153-2)

Parentage with details of its pedigree : The variety has been evolved from a straight cross involving Mexican high yielding, rust resistant and red grained wheat, Tonari 71 and NP 890. The pedigree method of selection was followed.

Sponsored by : Director, IARI, New Delhi-110012

Description of variety:

(a) Plant height : The variety is double dwarf and its height ranges from 80-100 cm.

(b) Distinguishing morphological characters : This is the only cultivated dwarf variety that has distinct pubescent glumes.

(c) Maturity (range in number of days) Seeding/Transplanting to flowering seed to seed : The variety falls in Medium early to Medium late maturity group. Seeding to flowering 94 days and seeding to maturity 125 days.

(d) Reaction of major diseases : The variety is reported resistant for leaf rust, yellow rust, Karnal bunt and powdery mildew.

(e) Reaction to major pests : No insect attack has ever been observed on DL 153-2. However, the variety is free from storage pests possibly because of its very hard texture of seeds like other deshi wheats.

(f) Agronomic features (e.g. resistance to lodging, drought, frost and shattering, fertilizer responsiveness, suitability for early or late sown conditions, seed rate etc.) : Variety is highly resistant to lodging, good drought resistant and also non-shattering type.

Agency responsible for maintaining the breeder's stock. : Indian Agricultural Research Institute, New Delhi-110012.

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2. Crop : Wheat (*Triticum aestivum*)

Variety : HUW-213 (Malaviya Wheat-213)

Institution or Agency responsible for developing the variety. : Department of Genetics and Plant Breeding, Institute of Agricultural Sciences Banaras Hindu University, Varanasi-221005.

Parentage with details of its pedigree : (Nortono × Moti) × HD 2160 pedigree method

Description of the variety : Double dwarf (85-95 cm), stiff straw, broad and green leaves, medium long, compact, broad white awned spikes, early in maturity. Maturity period similar to Sonalika. Resistant to all the diseases both under natural and artificial conditions. Amber, hard, medium bold and lustrous grains.

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3. Crop : Wheat (*T. aestivum*)

Variety : CPAN 1796

Sponsored by : Director, IARI, New Delhi-110012

Parentage with details of its pedigree : Napo-Tobari 'S' × 8156/Kalyan-Blue bird, pedigree method

Description of the variety :

(a) Plant height : Single dwarf (110 cm)

(b) Distinguishing morphological characters:

(i) Early growth habit : Erect
(ii) Auricle colour and hairiness : White, hairy
(iii) Tillering capacity : Very good
(iv) Colour of foliage and stem : Green
(v) Leaf angle : Drooping
(vi) Ear shape : Fusiform
(vii) Ear density : Medium dense

(viii) Ear length : Medium long
(ix) Awning : Fully awned
(x) Peduncle shape : Crooked
(xi) Awn arrangement : Semi-pressed
(xii) Awn colour : White to light brown
(xiii) Glume colour : White
(xiv) Glume surface : Glabrous (non-hairy)
(xv) Glume shoulder : Elevated
(xvi) Beak shape : Accuminate
(xvii) Grain colour : Amber
(xviii) Grain texture : Hard
(xix) Grain size : Medium (40 gms-1000 grain weight)

(c) Maturity : No. of days for heading : 131-140
No. of days for maturity : 200-205

(d) Reaction to major diseases : 1796 showed superiority to Sonalika, Kalyansona & VL 421 for resistance to rusts under both natural and artificial conditions of infection.

(e) Reaction to Insect pests : No major pest/nematode observed or reported.

(f) Agronomic features : Highly resistant to lodging and shattering. Responsive to higher doses of fertilizers. Suitable for early, normal and late sowings.

Agency responsible for maintaining breeders stock : Wheat Project Directorate, Cummings' Laboratory, IARI, New Delhi-12.

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4. Crop : Bread Wheat, (*Triticum aestivum* . L)

Variety : HW-741

Sponsored by : Shri M. Kochumadhavan

Parentage with details of its pedigree : Bb-Cc/Cno 's'—No. 66-Pi 62

Description of variety :

(a) Plant height : 85-95 cms. Double dwarf.

(b) Distinguishing morphological characters :
Early growth habit : Erect
Tillering Capacity : Very good
Colour of stem & foliage : : Golden, green
Ear shape : Fusiform
Ear density : Medium dense
Awning : Full awned
Awn colour : Brown
Glume hairiness : Glabrous
Fragility of rachis : Non-fragile,
Threshability : Easy

Maturity (range in number of days) Seeding/Transplanting to flowering seed to seed : Heading (sowing to flowering) 68 days showing to maturity-124 days.

Reaction to major pests : No pest is encountered in the field in the southern hills.

Agronomic features : Resistant to lodging, drought, frost and shattering. High response to fertilizers, suitable for normal sown and late sown conditions, seed rate: 100 kgs. per ha.

Agency responsible for maintaining the breeder's stock. : IARI Regional Station, Wellington, The Nilgiris, Pin code : 643 231.

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5. Crop : Wheat (*Triticum aestivum* L.)

Variety : HD 2327

Sponsored by : Director, IARI, New Delhi-110012

Parentage with details of its Pedigree : 346-1 × HD 2160 Pedigree method

Description of the Variety :

(a) Plant height : Semi dwarf (74-95 cms.)

(b) Distinguishing morphological characters :

(i) Early growth habit	Semi-erect
(ii) Tillering capacity	Very good
(iii) Colour of foliage and Stems	Dark green
(iv) Ear shape	Mid dense
(v) Ear density	Mid dense
(vi) Awning	Fully awned
(vii) Glume colour	Glabrous
(viii) Glume hairiness	Glabrous
(ix) Awn colour	Creamish
(x) Fragility of rachis	Tough
(xi) Threshability	Easy
(xii) Grain colour	Amber
(xiii) Grain texture	Hard
(xiv) Grain size	Medium bold
Maturity (range in number of days), Seeding/ Transplatnting to flowering, seed to seed	Medium early
Reaction to major diseases	In the field and also under controlled Reaction to physiological strains/races HD 2327 has shown high degree of resistance to black and brown rusts in both field as well as seedling stage.
Reaction to major pests.	No major pests/nematodes observed or reported.
Agronomic features	Highly resistant to lodging and shattering. Responsive to high doses of fertilizers, suitable for late sowing and limited irrigations.
Agency responsible for maintaining the breeder's Stock.	SR. Wheat, Breeder, IARI, New Delhi-110012.

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6. Crop	Wheat (*Triticum aestivum*)
Variety	HD 2307
Sponsored by	Director, IARI, New Delhi.
Parentage with details of its Pedigree.	HD 2160×116-1-3 Pedigree Method

Description of the variety :

(a) Plant height	Semi dwarf (72-90 cm)
(b) Distinguishable morphological characters	
(i) Early growth habit	Semi erect
(ii) Tillering capacity	Very good
i) Colour of foliage and stem.	Green
) Ear shape	Fusiform
) Ear density	Mid-dense
i) Awning	Fully awned
i) Glume colour	Creamish
i) Glume hairiness	Glabrous
) Awn colour	Creamish
) Fragility of rachis	Tough
i) Threshability	Easy
(xii) Grain colour	Amber
~~(xiii) Grain texture~~	Hard
(xiv) Grain size	Medium bold
Maturity	Early
Reaction to major diseases	HD 2307 possess high degree of resistance to black and brown rusts.
Reaction to major pests	No major pests/nematodes observed or reported.
Agronomic features	Resistant to lodging and shattering. Responsive to high doses of fertilizers suitable for late sowing.
Agency responsible for maintaining the breeder's stock	Sr. Wheat Breeder, Division of Genetics, IARI, New Delhi.

7. Crop	:	Wheat (*Triticum aestivum* L.)
Variety	:	HD 2285
Sponsored by	:	Director, IARI, New Delhi.
Parentage	:	(HD 1912-HD 1592/HD 1962-E 4870-K 65) × HD 2160/HD 2186.
Description of the variety :		
(a) Plant height	:	Double dwarf (85-90 cms.)
(b) Distinguishing morphological characters:		
(i) Early growth habit	:	Semi erect.
(ii) Tillering capacity	:	Very good.
(iii) Colour of foliage and stem.	:	Dark green
(iv) Ear shape	:	Fusiform
(v) Ear density	:	Medium dense
(vi) Awning	:	Fully Awned
(vii) Glume colour	:	White
(viii) Glume hairiness	:	Glabrous
(ix) Awn colour	:	White
(x) Fragility of rachis	:	Tough
(xi) Threshability	:	Easy
(xii) Grain colour	:	Amber
(xiii) Grain texture	:	Hard
(xiv) Grain size	:	Medium bold.
Maturity	:	Early (Days to flowering : 80-85) (Days to maturity : 125-130)
Reaction to insect pests	:	No major pest/nematode observed or reported.
Agronomic features	:	Highly resistant to lodging and shattering. Suitable fcr early, normal and late sowings as well as limited irrigations.
Agency responsible for maintaining the breeder's stock	:	Sr. Wheat Breeder, Division of Genetics, IARI, New Delhi.

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8. Crop	:	Wheat (*Triticum aestivum* L.)
Variety	:	HD-2278

NOTE : The details features of this variety can be seen in the proceedings of the 13th Meeting of the Central Sub-Committee on Release of Varieties held on 11-3-1983.

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9. Crop	:	Bajra (*Pennisetum americanum* L.) Leekel
Variety	:	ICMS 7703
Sponsored by	:	All India Coordinated Millets Improvement Project, College of Agri., Pune-411005.
Parentage with details of its pedigree	:	Bajra variety, ICMS 7703 is an ICRISAT synthetic made by crossing selected inbred lines derived from seven crosses.

(1)	(Souna D2	×	Ex Bornu)-2,
(2)	(J 25-1	×	700515-9)-2-3,
(3)	(B 282	×	J 804)-1-3,
(4)	(J 25-1	×	700797)-5-3,
(5)	(J 260-1	×	700557-1)-4-9,
(6)	(J 1798	×	700594)-2 and
(7)	(700250	×	Ex Bornu)-6.

Description of the variety:

(a) Plant height	:	Medium tall (195-215 cms) 3-5 tillers.
(b) Distinguishing morphological characters.		
(i) Leaf	:	Medium size
(ii) Stem	:	Thinner stem than WC-C75, internodes are partly covered

(iii) Ear Head	Heads are very compact and cylindrical in shape, tapering less towards the tip than in WC-C75.
(iv) Glumes	Short and straw coloured.
(v) Seed	Grain is medium size (6-8g/1000), obovate, and of a shining slate colour.

Maturity	85-90 days.
Reaction to major diseases	Resistant to downy mildew.
Reaction to major pests	—
Agronomic features:	
(i) Lodging	Non-lodging.
(ii) Drought and salinity	Tolerant to drought. Tolerant to salinity.
(iii) Suitable for early or late plantings	Suitable for both plantings.
(iv) Plant population	160,000 plants/hectare with 50 × 10 cm spacing for higher yields.
(v) Fertilizer response	Good, gives superior yields than local even at low fertility.
(vi) Seed rate	3 Kg/ha.
(vii) Intercrop response	Good.
Agency responsible for maintaining the breeder's stock	ICRISAT, Patancheru P.O., Andhra Pradesh-502 324.

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10. Crop	Sorghum (Forage)
Variety	SU 45
Sponsored by	All India Co-ordinated Sorghum Improvment Project, (ICAR)
Parentage with details of its pedigree	This variety, developed by selection from local types of Udaipur region is superior to the released forage sorghum varieties (early group in fodder production both in quality as well as quantity. It is early flowering (65-75 days), medium in early vigour, tall (220-260 cm), long and broad leaved with good leaf stem ratio, palatability, digestibility and crude protein content. It is also resistant to stem borer damage.
Description of the variety :	
(a) Plant height	220-260 cm
(b) Distinguishing morphological characters:	
(i) Stem thickness	Medium (1.9 to 3.0 cm)
(ii) Pigment on plant	Normal
(iii) Leaf colour	Light green
(iv) Leaf length	60 to 70 cm
(v) Leaf breadth	5.0 to 6.1 cm
(vi) Early vigour	Medium (2.1 to 2.6)
(vii) Leaf/stem ratio	Good (0.32)
(viii) No. of leaves	11-13
(ix) Distinguishing characters	Normal plant type with drooping leaves thick stem, oval shaped ear head exerting full from the flag leaf and white chalky bold flatishgrains.
(c) Days to flowering initiation	60-65 days
Days to 50% flowering	70-75 days.
Agronomic features	
(i) Lodging	Non lodging
(ii) Drought	Tolerant
(iii) Suitable to early or late planting	Suitable to both the systems.
Agency responsible for maintaining breeder's stock	AICSIP, Rajasthan College of Agriculture, Udaipur-313001 (Raj).

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11. Crop	Groundnut (*Arachis hypogea* L.)
Variety	Chitra (MA-10)
Sponsored by	Breeder (Groundnut), Groundnut Research Station, Mainpuri.
Parentage with details of its pedigree	It is a selection from a cross between Spanish 5B-1 and EC. 1688.
Description of the variety :	
(a) Plant height	28-32 cms.

(b) Distinguishing morphological characters : Semi-spreading in habit with profuse branching, foliage dark green in colour, biseeded medium bold pods, reticulation very prominent, beak not distinct, constrication shallow, rose-variegated kernel colour.

Maturity : 125-130 days.

Reaction to major diseases : Moderately resistant to rust and leaf spot diseases .

Agronomic features : The variety has shown stability in yield performance over the locations, It performed very well in the Northern Zone with a mean yield of 2.5 Tonnes/ha

Seed rate : 70 kg kernels/ha.

Spacing : 30 × 15 cm.

Yield — 2200—2700 kg/ha.

Quality of produce of grain, forage/fibre/including nutritive value where relevant :

(1) Oil content : 48-50%

(2) Shelling % : 71-72%

(3) 100 kernel wt. : 48-52 gm.

Agency responsible for maintaining the breeder's stock : Breeder (Groundnut), Groundnut Research Station, Mainpuri.

12. Crop : Toria (*Brassica campestris* var toria)

Variety : PT-303

Sponsored by : GB Pant University of Agril. & Tech., Pantnagar, Distt. Nainital (UP)

Parentage : B 54 × DSH 17 MD

Description of the variety :

(a) Plant height : 120-152 cm.

(b) Distinguishing morphological characters : Plants are waxy and have bright yellow flowers. It has medium bold seeds of brown colour. Fruiting is neither very dense nor sparsh, it is similar to T. 9. Leaves are green and are not anthocyanine pigmented.

Maturity : Around 95 days, *at par* with T-9

Reaction to major diseases : Tolerant to *Alternaria* blight, white rust and downy mildew diseases.

Quality of produce : Seeds are attractive, brown coloured, slightly bolder than T. 9 .

Agency responsible for maintaining the breeder's stock : G.B. Pant University of Agril. & Tech., Pantnagar, Distt. Nainital (UP).

13. Crop : Mustard (*Brassica juncea*)

Variety : Vaibhav (RK 1418)

Sponsored by : Breeder (Rapeseed-mustard), CS Azad University of Agril. & Tech., Kanpur.

Parentage with details of its pedigree. : This variety (RK 1418) was evolved through biparental crossing invoving Varuna, Keshri CSU-10 as economic parents and 1 B 1775, 1B 1866 and 1B 1786 as doner parents.

Description of the variety :

(a) Plant height : 140-145 cms.

(b) Distinguishing morphological characters : Plant medium tall, moderately branched, light green in colour, Siliqua size is medium containing about 15 seeds/pod, pod length around 6 cms., seed brown in colour and medium in size (4.5 gms/1000 seeds)

(c) Maturity : 120-125 days

(d) Reaction to major diseases under field condition : This variety is as good as Varuna/Kranti in reistance to *Alternaria blight* where as it is decidedly much superior to Kranti & better than Varuna in resistance to white rust.

(e) Reaction to major pests in field condition. : Being a bit early in maturity, it very well escapes the *aphid* attack.

(f) Agronomic features :

(1) Being medium in height, it resist lodging.

(2) This variety has proved its superiority over National Check 'Varuna' and Kranti under rainfed condition so it very well tolerates moisture stress conditions.

(3) Seed rate — 4-5 Kgs/ha.

(g) Quality of produce : Oil Content 37.8% as against 38% of Varuna.

Agency responsible for maintaining breeder's stock : CS Azad University of Agril. & Tech., Kanpur.

14. **Crop** : Mustard (*Brassica juncea*)

Variety : Vardan (RK-1467)

Sponsored by : Breeder (Rapeseed-mustard), CS Azad University of Agril. & Tech., Kanpur.

Parentage with details of its pedigree. : This variety was developed through biparental crossing involving Varuna Keshri and CSU-10 as economic basis and 1B 1775, 1B 1866 & 1B 1786 as donor parents.

Description of the variety:

(a) Plant height : 140-145 cms.

(b) Distinguishing morphological characters : Plants medium tall, moderately branched, siliqua size medium containing about 10-12 seeds/pod, pod length around 6 cms., seeds brown in colour and medium in size (4.5 gms./1000 seeds).

(c) Maturity : 120-125 days

(d) Reaction to major diseases under field conditions. : This variety has better field resistance against *Alternaria blight* as well as white blister as compared to the National Check.

(e) Reaction to major pests. : Being a bit early in maturity, it normally escapes the aphid attack.

(f) Agronomic features : (1) Being medium tall, it resists lodging.

(2) This variety has given good yields under irrigated conditions and therefore, recommended for general cultivation under irrigated conditions.

(3) Seed rate — 4-5 Kgs/ha.

(4) This variety is suitable for intercropping with wheat also.

Agency responsible for maintaining the breeder's stock. : CS Azad University of Agril. & Tech., Kanpur.

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15. Crop : Bengal gram (*Gicer arietinum* L.)

Variety : Pusa-408

Sponsored by : Head, Division of Genetics, IARI, Pusa, New Delhi-11012.

Parentage with details of its pedigree : An induced mutant of variety G-130, this variety has been evolved by induction and isolation of micromutations after treating the parent variety by 60 KR gamma rays. Single plant progeny method was used for handling the material in the early segregating generation.

***Description of the variety* :**

(a) Plant height : Ranges from 40-65 cm

(b) Distinguishing morphological characters :

(i) Habit : This variety is semi-erect in growth habit.

(ii) Leaves : The leaflets are narrow and linear with light (dull, dark) green colour.

(iii) Branches : Primary and secondary branches are moderate in thickness.

(iv) Pods : Plants of this variety bear a large number of pods which bring on the lower side, are usually not visible from the top side.

(v) Grains : Yellowish brown, medium bold (13 g/100 seeds) of uniform size. Number of grains per pod is 2-3 average about two.

(c) Maturity : Pusa-408 takes 140-155 days from seeding to maturity.

(d) Reaction to major diseases : Pusa-408 showed an overall resistant reaction to *Ascochyta* blight. BGM-408 showed moderate to resistant reaction to wilt (*Fusarium oxysporum*) disease.

(e) Reaction to major pests : BGM-408 does not suffer to any notice able extent by insect pests including pod borer (*Heliothis armegera*) for which it shows very low incidence of damage including lowest nematode scores. Similarly very low infection of root knot nematode was observed in this variety.

(f) Agronomic features : (1) This variety shows good resistance to normal drought conditions.

(2) This variety shows no susceptability to frost as no reports of frost damage were received during the period of its three years testing.

Agency responsible for maintaining the breeder's stock : Genetics Division of IARI, New Delhi.

16. Crop : Bengal gram (*Cicer aritinum* L.)

Variety : Pusa-413

Sponsored by : Head, Division of Genetics, IARI, New Delhi-110012.

Parentage : An induced mutant of variety G-130, this variety has been evolved by induction and isolation of micromutations after treating the parent variety by 60 KR gamma rays. Single plant progeny method was used for handling the material in the early segregating generation.

Description of the variety :

(a) Plant height : Ranges from 50-80 cm.

(b) Distinguishing morphological characters

Habit : This variety is semi-erect in growth habit.

leaves : The leaflets are narrow and linear with light (dull, dark) green colour.

Branches : Profuse branching, primary and secondary branches are moderate in thickness.

Pods : Plants of this variety bear a large number of pods which bring on the lower side, are usually not visible from top side. Pods are light yellow colour and smooth.

Grains : Pusa-413 has attractive golden yellow medium bold (13.5 g/100 seeds) of uniform size. Number of grains per pod is 2-3, average about two.

Maturity : Pusa-413 takes 130-140 days from seeding to maturity.

Reaction to major diseases : Pusa-413 has shown resistant reaction comparable with best check to *Ascochyta* blight at most of the locations during 1981-82 and 1982-83. It remained free from stunt virus infection at Hissar and Durgapura and from foot rot during 1981-82.

Reaction to major pests : Pusa-413 showed higher resistance to incidence of pod borer (*Heliothis armegera*) than the checks and latest released variety Pusa-209.

Agronomic features : Pusa-413 shows good resistance to normal drought conditions. This variety shows no susceptability to frost as no reports of frost damage were received during the period of its three years testing.

Agency responsible for maintaining the breeder's stock : Genetics Division of IARI, New Delhi.

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17. Crop : Bengalgram (*Cicer arietinum* L.)

Variety : Pusa-417 (GIRNAR)

Sponsored by : Head, Division of Genetics, IARI, New Delhi-110 012.

Parentage with details of its pedigree : An induced mutant of Var. BG-203, Pusa 417 has been evolved by induction and isolation of micromutations after treating the variety by 60 KR gamma rays. Single plant progeny method was used for handling of the material in the early segregating generation.

Description of the variety :

(a) Plant height : Mean 40 cm. range 27-50 cm.

(b) Distinguishing morphological characters

Habit : This variety is short, semi-erect.

Leaves : Leaflets are small ovate and light green.

Branches : Thick, profuse branches with light pink colour.

Pods : Yellow coloured pods wth reddish tinge, elongated in shape and smooth type.

Grains : Very attractive golden yellow medium bold (13g/100 seeds) of uniform size.

Maturity : Mean 118 days, range 100-145 days.

Reaction to major diseases : Pusa-417 is resistant to Wilt, stunt virus, collor rot, foot rot and root rot.

Reaction to major pests Pusa-417 shows moderate resistance to pod borer and is comparable to check C-235 and BDN-9-3.

Agronomic features : Pusa-417 has shown good resistance to normal drought condition. This variety has shown good response to the application of phosphatic fertilizers.

Agency responsible for maintaining the breeder's stock : Division of Genetics, IARI, Pusa, New Delhi-110012 is the agency responsible for maintaining the breeder's stock of all the above three varieties of Bengal gram namely Pusa-408, Pusa-413 & Pusa-417.

18. Crop : Arhar (*Cajanus cajan* (*L.*) Millsp.)

Variety : Pusa-84

Sponsored by : Head, Division of Genetics, IARI, New Delhi-110 012.

Parentage with details of its pedigree : Pusa 84 was developed from the cross 'Pusa Ageti × T-21'.

Description of the variety :

(a) Plant height : 200 cm.

(b) Distinguishing morphological characters

Growth habit : Medium tall, determinate branching, Semi-spreading plant type.

Leaf characters : Deep green, trifoliate compound, leaflets oblong, lanceolate, acute, entire, Densely silky beneath, upper surface smooth.

Flower : Papilionaceous flower, standard-yellow having light streaks, wings-light yellow and keel-cream coloured.

Pods : Unripe pods green with purple streaks, slightly, hairy, ripe, darkstraw pod size medium in length (4-5) having 3-4 seeds/pod 150-180/plant.

Seed-Brown, round medium bold (7.5 g/100 seeds)

Maturity : It takes 140-150 days to mature in monsoon season. In summer sowing it takes 185-190 days.

Reaction to major diseases : Pusa-84 has been found moderately resistant to phytophtora blight and wilt caused by *Fusarium undum.*

Reaction to major pests : Pusa-84 has been found relatively tolerant to pod-borer (*Heliothis armiger* and fairly resistant for pod-fly damage under field conditions.

Agency responsible for maintaining the breeder's stock : IARI, Regional Station, Karnal.

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19. Crop : Buffel grass (*Cenchrus ciliaris Linn.*)

Variety : Marwar Anjan (CAZRI-75)

Sponsored by : Breeder, Central Arid Zone Research Institute, Jodhpur (Raj.)

Parentage with details of its pedigree : From exotic material EC 14369 received from Australia in 1957.

Description of the variety :

(a) Plant height : 60-90 cm depending upon edapho-climatic conditions

(b) Distinguishing morphological characters : Tall erect, late maturing, thick stem lamina coated with white waxy substance leaves long, broad, droopy, high tillering ability. Spike medium size thick and compact.

(c) Maturity : Days to seed maturity - 90-110 days. Days to flowering 70-80 days.

(d) Reaction to major diseases : Field resistance to disease.

(e) Reaction to major pests : Moderately resistance to major insect/pests like mellocerus maculosus, grass hoppers and Amrasca sp.,

(f) Agronomic features :

(1) Resistance to lodging.

(2) Drought hardy

(3) Responsive to fertilization upto 90 kg N/h but economic optimum dose is 20-30 kg N/h.

(4) Suitable for sowing in Kharif season at any time depending upon the rainfall.

(5) Seed rate 5-6 kg/ha.

Agency responsible for maintaining the breeder's stock : CAZRI, Jodhpur.

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20. Crop : Birdwood grass (*Cenchrus setigerus* (Vahl)

Variety : Marwar Dhaman (CAZRI 76)

Sponsored by : Breeder, Central Arid Zone Research Institute, Jodhpur (Raj.)

Parentage with details of its pedigree : From Exotic material 17655 received from Australia in 1957.

Description of the variety :

(a) Plant height : Semi erect, 50-60 cm.

(b) Distinguishing morphological characters	Thin stemmed, early maturing, foliage colour, yellowish green, leaves long broad, ligules light brown spike medium size lax.
(c) Maturity	Days to flowering 45-55 days. Days to seed maturity 75-90 days
(d) Reaction to major diseases	Field resistance to all diseases
(e) Reaction to major pests	Moderately resistance to major insect & Pest like myllocerus maculosus grass hoppers and Amrasca sp.
(f) Agronomic features	(1) Lodging resistance (2) Drought hardy (3) Responsive to fertilization upto 90 kg N/h but economic optimum dose is 20-30 kg N/ha. (4) Suitable for sowing in Kharif season at any time depending upon the rainfall. (5) Seed rate—5-6 kg/h.
Agency responsible for maintaining the breeder's stock	CAZRI, Jodhpur.

21. Crop	Scarlet Linum (*Linum* grandiflorum Desf)
Variety	Meera
Sponsored by	Sukhadia University, Udaipur.
Parentage with details of its pedigree	The local scarlet red coloured variety was treated with mutagenic agents—EMS, MMS and Gamma rays in 1971-72. The mutant was isolated in 1972-73. It is fixed for last six years.
Description of the variety	
(a) Plant height	90-100, cm under Udaipur conditions.
(b) Primary Branches	4-6 with many lateral flowering branches on the main stem & primary branches.
(i) Leaf	Leaves are lanceolate to ovate, acute size 3-5 × 1—1.5 cm.
(ii) Flowers	White pentamerous, 3—3.5 cm across with 1-1.5 cm dark pink eye. Bisexual. Petals persist for 3-4 days. style & stigma white, free.
(iii) Sepals	Lanceolate, 1.1 to 1.4 cm long margins ciliate.
(iv) Seed coat colour	Yellowish brown.
(v) Pollination	It is a cross pollinated plant with self incompatability.
(c) Maturity	160-170 days from seed to seed.
Time of appearance of first flower	95-100 days after sowing.
Duration of flowering	65-75 days.
Agency responsible for maintaining the breeder's stock	S.K.N. College of Agriculture, Jobner-303 329 (Raj).

22. Crop	French Bean (*Phaseolus vulgaris*)
Variety	VL Bauni Bean-1
Sponsored by	Breeder, Vivekananda Parvatiya Krishi Anusandhan Shala. Almora, (UP).
Parentage with details of its pedigree	The culture was earlier introduced as Snap-bush (VLI. 1) and Rival (VLI. 2) from United States of America. However, these cultures were found to be similar in all morphological and agronomical characters and have, therefore, been bulked under the name VL Bauni-1.
Description of the variety	
(a) Plant height & Distinguishing morphological characters	Dwarf plants (35-40 cms) having round, stringless and fleshy pods. The leave are light green in the initial stages but turn deep green during fruiting period. The flowers are white with light purplish tinge.
(b) Maturity	45 to 63 days depending upon the time of sowing.
(c) Period of harvest and possibility of extending the harvesting Cropping period	It takes 15-20 days for completion of harvest. The harvesting/cropping, period can be extended by sowing from March end to August.
Agronomic (features) Resistance to drought and frost	During rainy season, it can be grown under rainfed conditions. However, spring-summer season crop needs irrigation depending upon the weather condition of the place.
Agency responsible for maintaining the breeder's stock	Vivekananda Parvatiya Krishi Anusandhan Shala, Almora, UP.

23. Crop	:	Sweep Potato (*Ipomoea batata* L.)
Variety	:	Rajendra Shakarkand-5
Sponsored by	:	All India Co-ordinated Research Project on tuber crops (other than potato), main centre-Tirhut, College of Agri., Dholi (RAU, Bihar).
Parentage with details of its pedigree	:	Rajendra Shakarkand-5 is a cross between cross—4×H-5. The seed parent cross-4 is the prevalent variety of Bihar.
Description of the variety :		
(a) Plant height/spread stem girth/branching habit	:	Spreading and less canopy, branching not much as female parent cross-4, vines thick (1.8 cm girth).
(b) Distinguishing morphological characters	:	Leaf colour is green as against dark-green of female parent cross-4, size-broad (9.0×11.8 cm) with 4 to 6 lobes.
Maturity	:	105-120 days. Tuber can also stand late harvesting.
Agronomic features	:	Resistance to flood, drought, frost and other environments, fertilizers responsiveness and suitability for early or late planted conditions, rate of planting material.
Agency responsible for maintaining the breeder's stock	:	All India Co-ordinated Project on Tuber Crops Centre-Tirhut, College of Agriculture, Dholi (RAU, Bihar).

24.. Crop	:	Tomato
Variety	:	Punjab Chhuhara
Sponsored by	:	Breeder, Deptt. of Vegetable Crops, Landscaping & Floriculture, PAU Ludhiana.
Parentage with details of its pedigree	:	Derived from the cross Punjab Tropic × BC 55055.
Description of the variety :		
(a) Distinguishing morphological characters	:	Foliage dense, Plants dwarf and bushy; fruits medium sized, pear shaped fleshy, bilocular, pericarp thick colour uniform red.
(b) Maturity in number of days from sowing to first and 50% harvest	:	I harvest — *Nov. Planting* 135 — *Feb. Planting* 90 50% — *Nov. Planting* 145 — *Feb. Planting* 100
(c) Period of harvest and possibility of extending the harvesting cropping period.	:	Nov. Last week of April to 1st week of June. Feb. Mid May to end June
(d) Reaction to major diseases	:	It has tolerance to root-knot nematodes. Susceptible to early and late blight.
(e) Reaction to major pests	:	Relatively less prone to fruit borer.
(f) Season for which recommended	:	Main summer crop.
Agency responsible for maintaining the breeder's stock	:	Deptt. of Vegetable Crops, Landscaping and Floriculture, PAU, Ludhiana.

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25. Crop	:	Groundnut
Variety	:	Kadiri-3
Sponsored by	:	AP Agril. University, Agril. Res. Station, Kadiri-515 591, Anantapur Distt.
Parentage with details of its pedigree	:	Kadiri-3 variety was evolved by pure-line selection. Under exchange of germplasm material one culture Robout 33 a valencia type Groundnut was received through the Project Coordinator and was grown in 1969 in germplasm bank.
Description of the variety :		
(a) Plant height	:	The height of main axis ranges from 12-15 cm.
(b) Distinguishing morphological characters	:	Kadiri-3 (Robout 33-1) is of virginia Bunch habit. The main distinguishing morphological characters of this variety are : (a) Among the varieties of Virginia habit group released so far in the country Kadiri-3 (Robout 33-1) alone has got the shortest duration of 110 days. (b) The pods are borne in a cluster around the root zone. (c) Pod is short, two seeded without prominent reticulation and beak. (d) Testa is rose in colour where as in all other released Virginia type varieties the testa colour is either buff or tan.

(c) Maturity : 110-115 days.

(d) Reaction to major diseases : This variety is tolerant to bud necrosis but susceptible to cercospora leaf spot disease. However, there will be not much of loss in yield due to leaf-spots, since the pods mature in this variety by the time the disease gets intensified. Reaction of the variety to diseases was not tested under controlled conditions.

(e) Reaction to major pests : Resistant to pod borer, fairly tolerant to thrips and aphids under field conditions.

(f) Agronomic features : This variety is suitable for late sown conditions also in Andhra Pradesh during the Kharif season.

Agency responsible for maintaining the breeder's stock : The Assistant Oilseeds Specialist, Agril. Research Station, Kadiri, Anantapur (Dt.). Andhra Pradesh.

Crop : Arhar

Variety : Manak (H 77-216)

Sponsored by : Department of Plant Breeding, HAU, Hissar.

Parentage with details of its pedigree : T 21 × UPAS—120

Description of the variety :

(1)	Days to 50% flowering	80.00
(2)	Days to maturity	120.00
(3)	Plant height (cm)	215.70
(4)	Number of branches per plant	9.90
(5)	Number of cluster per plant	64.40
(6)	Number of pods per plant	237.00
(7)	Number of pods per cluster	3.70
(8)	Number of seeds per pod	3.40
(9)	100 seeds weight (g)	6.50
(10)	Yield (q/ha)	20.24

Agency responsible for maintaining the breeders's stock : H.A.U., Hissar.

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27. Crop : Desi Cotton (*Gossypium arboreum*)

Variety : DS-1

Sponsored by : Professor and Head/ Director of Research, HAU, Hissar (India).

Pedigree : Gamma Radiation of G-27 recommended variety.

Description of the variety :

(a) Habit (compact, spreading bushy etc) : 150 to 190 cm and has tendency to grow taller in fertile soils.

(b) Distinguishing morphological characters : Red plant body. Several monopodia at the base. Leaves medium in size, Broad 3 to 5 lobes, flowers pink in colour, with dark red coloured petal spot, yellow pollen and medium sized bolls with good fluffy opening.

(c) Maturity : 170-185 days.

(d) Reaction to major diseases : Highly resistant to black arm (Bacterial blight).

(e) Reaction to major pests : Highly resistant to Jassids, moderately resistant to spotted bollworm and pink bollworm.

(f) Agronomic features : Resistant to lodging and drought: completes life cycle before the onset of frost. Its kapas sheds on opening of ball if not picked in time but comparatively less than control G-27 variety. Its response to fertilizer application very well; its recommended seed rate is 12-15 kg/ha.

Agency responsible for maintaining the breeder's stock : Cotton Research Station, (HAU), Sirsa.

28.	Crop	Mungbean (Moong) *Vigna radiata* L. Wilczek
	Variety	Pant Moong-3
	Sponsored by	GB Pant University of Agril. & Tech. Pantnagar, Distt. Nainital, (UP).
	Parentage	The variety has been developed from a cross of LM 294-1 and L.80
	Description of the variety:	
(i)	Maturity	75-85 days
(ii)	Plant height (cm)	85-90 cm
(iii)	Plant habit	Erect
(iv)	Stem	Green
(v)	Flower colour	Yellow
(vi)	Leaves	Broad and dark green
(vii)	Immature pods	Green, sparsely haired
(viii)	Mature pods	Brownish black (10-11 seeds/pod)
(ix)	Seed colour	Dull green
(x)	Seed size	2.5 to 3.0 g/100 seeds
(xi)	Resistance to diseases	It is resistant to mungbean yellow mosaic virus, *Cercospora* leaf spot and spot diseases.
	Distinguishing morphological characters	(i) Dark green, broad leaves. (ii) Most of the pods are outside leaf canopy.
	Agency responsible for breeder's seed	GB Pant University of Agril. & Tech. Pantnager, (U.P.).

Important features of the varieties recommended for Notification in the 4th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

1. Crop	Wheat		
Variety	GW-120		
Parentage	Inia-cno × Inia-Bb/Y-50E-Kal^3		
Breeder/Institute responsible for maintaining breeder's stock	Research Scientist (Wheat), Wheat Research Station, Gujarat Agril. Universiy, Vijapur, Distt. Mehsana.		
Description of the variety	*GW*-120	*Sonalika*	*Lok*-1
(1) Early growth habit	Semi-erect	Semi erect	Semi erect
(2) Tillering capacity	Very Good	Good	Good
(3) Height in cms	77-100	78-94	68-89
(4) Colour of stem and foliage	Green with profuse blooming & pale green auricle.	Deep green with profuse blooming & pale green auricle.	Deep green with profuse blooming & pale green auricle.
(5) Heading days	53-74	49-60	50-64
(6) Maturity days	99-100	93-106	97-100
(7) Ear characters :			
(a) Medium	Medium	Medium	Medium
(b) Awning	Fully beared	Fully beared	Fully beared
(c) Awn colour	White	Brown	White
(d) Glume colour	White	Brown	White
(e) Glume pubescence	Glabrous	Glabrous	Glabrous
(8) Threshability	Easy	Easy	Medium
(9) Grain characters in comparison to check :			
(a) Colour	Amber	Amber	Amber
(b) Texture	Semi-hard to hard	Soft to semi-hard	Soft to semi-hard
(c) Size	Medium	Bold	Bold
(d) 1000 grain wt. in gms	34-40	42-53	48-56
(10) Resistance to lodging in comparison to check	Good	Good	Good
(11) Resistance to grain shattering in comparison to check	Resistance to grain shattering	Not resistance to grain shattering	Resistance to grain shattering
Two identifiable and distinguishable morphological Characteristics	*GW*-120	*Sonalika*	*Lok*-1
(1) Colour of stem and foliage	Green with profuse blooming and pale green auricle	Deep green with profuse blooming & pale green auricle	Deep green with profuse blooming & pale green auricle
(2) Glume colour	White	Brown	White
(3) Glume pubescence	Glabrous	Glabrous	Glabrous
Yield (Q/ha)			
(a) Commercial Product	—		
(b) Seed	35.84		

2. Crop	:	Wheat
Variety	:	GW-405
Parentage	:	cno-Inia × Bb/cno × PI-62-Gallo.
Breeder/Institute responsible for maintaining breeder's stock	:	Research Scientist (Wheat), Wheat Research Station, Gujarat Agricultural University, Vijapur.
Description of the variety		*GW*-405
(1) Early growth habit	:	Semi-erect
(2) Tillering capacity	:	Very good
(3) Height in cms	:	78-105
(4) Colour of the stem & foliage	:	Deep green with profuse blooming & palegreen auricle.
(5) Heading days	:	50-73
(6) Maturity days	:	98-110
(7) Ear characters :		
(a) Density	:	Medium
(b) Awning	:	Fully beared
(c) Awn colour	:	White
(d) Glume colour	:	White
(e) Glume pubescence	:	Glabrous
(8) Threshability	:	Easy
(9) Grain characters in comparison to check :		
(a) Colour	:	
(b) Texture	:	Hard
(c) Size	:	Medium
(d) 1000 grain wt in gms	:	42.5
(10) Resistance to lodging in comparison to check	:	Good
(11) Resistance to grain shattering in comparison to check		Resistance to Grain shattering
Two identifiable and distinguishable morphological characteristics of the variety :		
(1) Colour of stem & foliage	:	Deep green with profuse blooming & pale green auricle.
(2) Glume colour	:	White
(3) Glume pubescence	:	Glabrous
Yield (Q/ha) :		
(a) Commercial Product	:	—
Seed	:	35.41

3. Crop	:	Pearl Millet, (*Bajra*)
Variety	:	PHB-47
Parentage	:	pb 111-37A × PIB 1234
Breeder/Institute responsible for maintaining the breeder's stock	:	The Millet Breeder, Department of Plant Breeding, Punjab Agricultural Universtiy, Ludhiana.
Description of the variety :		
(a) Description of hybrid	:	PHB 47 has compact and profusely bristled ear-heads with average length of about 35 cm. It attains a height of about 200 cm and matures in about 85 days. Its stems are thick and strong, leaves are broad and remain green till the ripening of grains. Its average yield is about 34 q/ha.
Two identifiable and distinguishable morphological characteristics of the variety	:	(1) Its ear-heads are long and profusely bristled. (2) The stems are thick with broad leaves that remain green till ear maturity.
Yield :		
(a) Commercial produce	:	Grain produce
(b) Average seed yield	:	The average grain yield is 3405 kg/ha.

4. Crop : Bajra

Variety : RCB-2

Parentage : 20 Inbreds of diverse genetic origin.

Breeder/Institute responsible for maintaining the breeder's stock : Plant Breeder (Millets) Agri. Res. Station, Durgapura, Jaipur.

Description of the variety : It is a variety developed by Sukhadia University at Durgapura Centre. The plant has thinner stem with broad, glabrous leaves, profuse tillers (3 to 6) flowering in 50 to 56 days and maturing in 80-85 days, plant height 200-260 cms. medium to long ear head (25-35 cms) cylindrical, slight tapering at the top and compact Medium bold seed with yellow greyish colour.

Two identifiable and distinguishable morphological characteristics of the variety : Thinner stem with

(1) Profuse tillers (3 to 6)

(2) Compact and longer ear head slight tapering at the top.

Yield :

(a) Commercial product 19 Qts per ha.

(b) Seed —

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5. Crop : Sorghum

Variety : Gujarat Jowar-9

Parentage : Gujarat Jowar-9 is a variety suited for rabi sowing, developed through pure line selection from the local rabi types collected from Brooch district.

Breeder/Institute responsible for maintaining the breeder's stock : Research Scientist (Sorghum) AICSIP, GAU, Surat.

Description of the variety : It is a rabi sown variety developed at Tanchha. It has given consistently higher grain yield than No. 8. The grains are pearly white and bold in size. This variety has given 32·5% higher grain yield than No. 8 in large scale varietal trials at Jowar Research sub-station, Tanchha for a period of six years (1973-78). Its performance in district trials was also encouraging. has yielded 14% more than Jowar No. 8 in the district trials conducted. It was moderately tolerant to shootfly and stem borer.

Two identifiable and distinguishable morphological characteristics of the variety : Earhead is very compact and curved. The grains are bold and pearly white. The colour of the stem and leaves is pink.

Yield :

(a) Commercial product : 1800 kg/ha.

(b) Seed 1500 kg/ha.

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6. Crop : Maize

Variety : Partap-1

Parentage : Partap-1 was developed by carrying out intrapopulation improvement for cold tolerance, grain yield, disease resistance and other agronomic traits in composite Partap.

Breeder/Institute responsible for maintaining the breeder's stock : Senior Maize Breeder, PAU, Ludhiana.

Description of the variety : It has strong thick stem and is highly resistant to lodging. The ears are medium long, thick with a tight husk cover. The grains are bold, flint to semi-dent and yellow orange. It has lower ear placement (about 70 cm) and medium plant height (about 150 cm). It matures in about 180-190 days and good level of cold tolerance.

Two identifiable and distinguishable morphological characteristics of the variety : It has strong, thick stem which is highly resistant to lodging. It has short plant height and low ear placement.

Yield :

(a) Commercial product : 70 q/ha.

(b) Seed : 70 q/ha.

7. Crop	Berseem
Variety	BL-10
Parentage	Selection from indigenous material
Breeder/Institute responsible for maintaining the breeder's stock	Economic Botanist (Fodders) Punjab Agricultural University, Ludhiana.
Description of the variety	Longer duration than BL-1.
Two identifiable and distinguishable morphological characteristics of the variety	(1) Maturity period: 2nd fortnight of June (2) Seed size smaller than BL-1
Yield:	
(a) Commercial product	Average 1100 q/ha.
(b) Seed	Average 780 kg/ha.

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8. Crop	Groundnut
Variety	Kissan (OG-1-13-3)
Parentage	Spanish Improved × B 31
Breeder/Institute responsible for maintaining the breeder's stock	Regional Research Station, Chipilima, Sambalpur.
Description of the variety	Spanish bunch Hybridization followed by pedigree selection.
Two identifiable and distinguishable morphological characteristics of the variety	Compact pods with least constriction and peak.
Yield:	
(a) Commercial product	—
(b) Seed	Kharif—1206 kgs/Ha., Rabi—2125 kg/ha.

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9. Crop	Raya
Variety	RLM-619
Parentage	Mutant of Raya RL-18
Breeder/Institute responsible for maintaining the breeder's stock	Punjab Agril. University, Ludhiana.
Description of the variety	RLM-619 has been developed from the irradiated seeds of RL-18 with 200 KR dose of Co 60. It is 15 days earlier in flowering and 7 days earlier in maturity than RLM-514. Plant type is dwarf which facilitates the spraying operation in advance crop growth stage. It has bold reddish brown seeds with an oil content of 43%. It is recommended for irrigated as well as rainfed conditions in the Punjab State.
Two identifiable and distinguishable morphological characteristics of the variety	(i) Medium plant height early in flowering and maturity. (ii) Has medium sized semi-erect leaves with less cerated margins than RLM-514. (iii) Has reddish brown bold seed with bolder pods than RLM-514.
Yield:	
(a) Commercial product	—
(b) Av. Seed yield	20 q/ha.

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10. Crop	Sweet clover (Senji)
Variety	YSL-106
Parentage	FOS-1 × 807
Breeder/Institute responsible for maintaining the breeder's stock	Economic Botanist (Fodders) Punjab Agril. University, Ludhiana. Longer duration than FOS-1.
Description of the variety	
Two identifiable and distinguishable morphological characteristics of the variety	(1) Taller than FOS-1 (2) Profusely branched than FOS-1 (3) Seed size smaller than FOS-1.
Yield:	
(a) Commercial product (green fodder)	Average 346 q/ha.
(b) Seed	Average 810 kg/ha.

11. Crop : Paddy

Variety : **Puduvai Ponni (Py-1)**

Parentage : Ponni × IR-8

Breeder/Institute responsible for maintaining the breeder's stock : Krishi Vigyan Kendra, Iyyankuttipalayam, Pondicherry-10.

Description of the variety :
Maturity Duration : 130-135 days
Plant type : Medium tall
Grain type : Medium slender (Medium)

Two identifiable and distinguishable morphological characteristics of the variety :
(a) Spikelet : Green tipped
(b) Ripening colour : Golden Brown
(c) Grain type : Medium
(d) Rice : White, abdominal white present

Yield:
(a) Commercial product : 5,656 kgs/ha.
(b) Seed : 4,524 kgs/ha.

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12. Crop : Paddy

Variety : **Punithavathy (Py-2)**

Parentage : Kannagi × Culture 2032

Breeder/Institute responsible for maintaining the breeder's stock : Krishi Vigyan Kendra, Iyyankuttipalayam, Pondicherry-10.

Description of the variety :
Maturity Duration : 90-100 days
Plant type : Dwarf
Grain type : Medium slender (Fine)

Two identifiable and distinguishable morphological characteristics of the variety
(a) Spikelet : Green tipped (GT)
(b) Ripening colour : Straw
(c) Grain : Medium slender (MS)
(d) Rice : White translucent, abdominal white absent

Yield:
(a) Commercial product : 4,668 Kgs/ha.
(b) Seed : 3,734 Kgs/ha.

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13. Crop : Paddy

Variety : Manhar

Parentage : IR 24 × Cauvery

Breeder/Institute responsible for maintaining the breeder's stock : GB Pant University of Agril. & Tech., Pantnagar.

Description of the variety
It is semi-dwarf (88 cm), photo-insensitive, early maturing variety and has high yield potential (60q/ha.)

Two identifiable and distinguishable morphological characteristics of the variety :
(i) Leaf sheath and apiculus green
(ii) Slightly leafy plant
(iii) Husk straw colour
(iv) Grains long slender
(v) Awnless

Yield:
(a) Commercial product : Av. yield 45 q/ha. with the potential of yielding 60 q/ha.
(b) Seed

14. Crop : Paddy

Variety : Birsa Dhan-101

Parentage : Fine gora × IET 2832

Breeder/Institute responsible for maintaining the breeder's stock : Birsa Agricultural University, Kanke, Ranchi-834 006.

Description of the variety :
(1) Extra-early maturity 80 - 85 days
(2) Photoperiod insensitive
(3) Semi-dwarf (72 cms)
(4) Panicle length : 18 cms.
(5) Spikelets/Panicle : 180
(6) 1000 grain weight : 23.50 gms.
(7) Grain length and shape : Medium

Two identifiable and distinguishable morphological characteristics of the variety :
(1) Extra-early maturity
(2) Leaf angle : Erect
(3) Grain length and shape : Medium

Yield :

(a) Commercial product : 20-25 q/ha.

(b) Seed : 20-25 q/ha.

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15. Crop : Bean (*Dolichos*)

Variety : Rajni

Parentage : 6014 × 6015

Breeder/Institute responsible for maintaining the breeder's stock : Economic Botanist (Vegetables) C.S. Azad University of Agri. & Tech., Kanpur.

Description of the variety : Pole type; Stem colour purple in early stage and green later, medium thick, round, slightly hairy; lamina dark green; flower purple; pod dark green, suture serrated, curved narrow, beaded, medium long (10-12 cm) width (1.2—1.5 cm); number of seeds (5-6/pod), seed blackish brown.

Two identifiable and distinguishable morphological characteristics of the variety :
(1) Stem : Purple in the beginning later green in maturity
(2) Pods : Dark green, suture serrated
(3) Flower : Purple coloured

Yield:

(a) Commercial product : Edible marketable pods 150-175 q/ha.

(b) Seed : 4 q/ha.

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16. Crop : Brinjal

Variety : Annamalai Brinjal

Parentage : This variety was developed by inbreeding a single plant AC. 49 A

Breeder/Institute responsible for maintaining the breeder's stock : Department of Agriculture, Botany & Horticulture, Annamalai University.

Description of the variety/hybrid : This variety was developed by inbreeding a single plant AC. 49A. The young leaves of this variety have a semi erect disposition. First picking starts in 75 days after planting and continue upto 200 days. This variety is fit for ratooning. In winter the vegetable has a deep purple colour & is lighter in summer.

Two identifiable and distinguishable morphological characteristics of the variety :
(1) Young leaves of this variety have a semi erect disposition.
(2) In cold temperature of winter the vegetable has deep purple colour and the colour is lighter in summer.
(3) The fruit is somewhat club shaped and slightly curved in the middle.

Yield: Kg/ha.

(a) Commercial product : Veg. 30,000 kg/ha.

17. Crop : Chilli

Variety : K.1 Chilli

Parentage : It is a pure line selection from Jorhat variety of Assam B.DA.

Breeder/Institute responsible for maintaining breeder's stock : Cotton and Millet Experiment Station, Kovilpatti, Tamil Nadu.

Description of the variety/hybrid : The stem is non-pubescent. The fruits are long, pendant and scarlet red in colour with non-compressed base and pointed tip.

(a) Plant height : 83 cm.

(b) Distinguishing morphological characters :

(1) Number of branches : 4-5
(2) Fruit length (cm) : 6-7
(3) Fruit girth (cm) : 3.2—3.6
(4) Number of Seeds/fruit : 70-75
(5) Percentage of seed content : 44
(6) Fruit colour : Scarlet red
(7) Disposition of fruit : Pendant

(c) Maturity (range in No. of days) :

Nursery : 45 days
Trasplanting to flowering : 65 days
Seed to seed : 200-210

Two identifiable and distinguishable morphological characteristics of the variety : (1) Fruits are pendant.
(2) Fruits are scarlet red in colour.

Yield: (Kg/ha)

(a) Commercial product : 1904 Kg/ha.

सत्यमेव जयते

Minutes of the Fifth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 28th January, 1986 under the Chairmanship of Dr. M. V. Rao, Dy. Director General (CS), ICAR, New Delhi

The list of the participants is attached as Annexure 1.

2. The Chairman at the outset expressed his happiness at the good representation of the Committee and welcomed the members to the meeting. He further informed that agenda items include three proposals of new bajra hybrids which are yet to complete the required number of trial years in the All India Crop Research Project of Millets. This is the first time that Committee is considering the proposal of new hybrid/varieties which have not undergone complete drill of testing and thus this meeting has acquired a special significance. The Chairman further enumerated that Bajra Programme is passing through a crisis stage due to the break down of resistance of the existing popular hybrids against the downy mildew disease. The disease appeared in an epidemic form in the certified seed production plots of summer '85 in Gujarat and high infection was found in the certified seed production plots of BJ-104 and BK-560. The problem was discussed in depth in the Department of Agriculture and Cooperation as well as by the scientists in the Workshop of the All India Coordinated Research Project on Seed Borne Diseases held at Solan. After a series of discussions, it was opined that in the absence of seed resistant hybrids/varieties in the needed quantities, the available seed of BJ-104, BK-560 from the infected fields might be treated with metalaxyl fungicide as an emergency measure to avoid losses to the farmers. The Government of India took emergent steps to import at heavy cost the metalaxyl to treat the seeds. The experimental plot laid down with treated seeds have confirmed the efficacy of the metalaxyl and 90 to 95 per cent control of the disease was observed.

However, variable results were observed at farmers' fields, one of the reasons is resowing of various fields by untreated seeds.

3. The Chairman also mentioned that the treatment of seeds with metalaxyl is not a permanent cure and solution of the problem lies in developing the disease resistant geno-types. The coordinated project has developed various composites, synthetics and hybrids which are reported resistant to the downy mildew disease. After great deal of discussions and reviews, some hybrids/varieties/composites were identified which showed good measure of resistance to downy mildew. These are to be multiplied on an emergency scale to meet, as far as possible, requirement of bajra seed for kharif, 1986 plantings. Three hybrid proposals included in the agenda today are reported to be downy mildew resistant and at the same time high yielding. To make available the seeds of these hybrids it is imperative that they are immediately released, notified and production of breeder and foundation seeds might be undertaken on war footing so that sufficient stock is made available to produce certified seeds of these hybrids for distribution in kharif '87. This is the primary reason to bring the proposals of these hybrids before the Committee and to skip some of the stages of testing. Similar situation arose in U.S.A. when maize crop was severely damaged in 1971 by the Northern corn blight. However emergent steps were taken and within two to three years resistant materials replaced the susceptible hybrids. We had to do similar things to release some weedicides to control weeds like *Phalaris minor* and wild oats in wheat and release of synthetic pyrethroids to control boll worms in Cotton. These actions had to be resorted to once in a while in national interest as emergent steps to ward off widespread losses and distress. However, I assure you that this would not be allowed to become a regular feature. The present critical situation in Bajra fully justify the deviation from established procedure in the national interest.

4. During discussions of the various proposals, the following important points emerged:

(i) the minimum quantity of breeder seeds should be specified for each vegetable crop to be maintained by the originating breeder/breeding institute at the time of submission of the proposal for release and notification. For each vegetable, the minimum quantity should be decided by the Deptt. of Agriculture and Cooperation and communicated to all concerned;

(ii) the Minimum Seed Certification Standards, of colocasia might be developed in consultation with Project Coordinator (Tuber Crops);

(iii) the Minimum Seed Certification Standards of Hirankhuri prescribed at field stage might be re-evaluated keeping in view the availability today of indented cylinders in the country. The indented cylinders are capable to separate the Hirankhuri seeds from wheat seeds. In view of this, the field standards might be reconsidered and reviewed;

(iv) the Project Director (Oilseeds) should send the list of varieties of rape seed mustard resistant/tolerant to white rust and at the same time high yielding, to the DDG (CS), ICAR. The more promising ones should be taken up for multiplication. Identification of the white rust resistant Brassica varieties might be undertaken on priority basis and release proposals are submitted to the Central Sub-Committee on Crop Standards, Notification and Release of Varieties;

(v) the Project Coordinator (Millets) would indicate the source of male sterility used for developing in male sterility lines of the three new Bajra hybrids namely MH-179, MH-180 and MH-182.

5. After this, the regular agenda was taken for discussion and the position in respect of each item is indicated below:

Item No. 1 : Confirmation of the minutes of the Fourth Meeting of the Central Sub-Committee on Crop Standards, Notification and Releas of Varieties held on 20th August, 1985.

The minutes of the earliar Meeting were confirmed.

Item No. 2 : Review of action taken on minutes of the Fourth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

The position indicated in the agenda notes was noted by the Sub-Committee/participants.

Item No. 3: Consideration of the proposals for Release

23 proposals of various varieties of different crops were evaluated for release. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated as under:

However, Birsa Sweta and Birsa Priya of Cowpea and French bean respectively were considered for notification only as per the request of Director of Agriculture, Bihar and accordingly, they have been included in Item No. 4. The proposal of Pusa Hill Topper, a variety of Cabbage could not be considered as required number of copies of the proposal were not received.

I. Details of the varieties recommended for release and notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Arhar	Bahar	(i) Recommended for release for cultivation in Bihar (excluding Plateau region) and Eastern U.P. (ii) Recommended for notification for entire country.
2.	Arhar	ICPL-87 (Pragati)	(i) Recommended for release for cultivation in the EACT in Peninsular India. (ii) Recommended for notification for entire country.
3.	Amaranth	Annapurna	(i) Recommended for release for cultivation at medium to high hills of Himachal Pradesh and Uttar Pradesh States. (ii) Recommended for notification for entire country.
4.	Bajra	PCB-15	(i) Recommended for release for cultivation throughout bajra growing areas of the country under rainfed and irrigated conditions. (ii) Recommended for notification for entire country.
5.	Bajra	MH-179 (ICMH 451)	(i) Recommended for release for cultivation throughout bajra growing areas of the country. (ii) Recommended for notification for entire country.
6.	Bajra . . .	MH-180 (ICMH 501)	(i) Recommended for release for cultivation throughout bajra growing areas of the country. (ii) Recommended for notification for entire country.
7.	Bajra	MH-182	(i) Recommended for release for cultivation in all pearl millet growing areas of India, particularly, Rajasthan, Maharashtra, Uttar Pradesh, Karnataka, Tamil Nadu, Punjab and Gujarat. (ii) Recommended for notification for entire country.

1	2	3	4
8.	Bhindi	Selection-2	(i) Recommended for release for cultivation throughout the bhindi growing areas of the plains and lower hills. (ii) Recommended for notification for entire country. (iii) The originating Institute would immediately multiply the sufficient quantity of breeder seeds so that indents of the seed producing agencies could be met.
9.	Cowpea	UPC 5287	(i) Recommended for release for cultivation throughout the Cowpea growing areas of the country. (ii) Recommended for notification for entire country.
10.	Colocasia	Satamukhi	(i) Recommended for release for cultivation in Andhra Pradesh Maharashtra, Kerala, Karnataka and Bihar. (ii) Recommended for notification for entire country.
11.	Kodo millet	Jawahar Kodo 41	(i) Recommended for release for cultivation in Madhya Pradesh, Gujarat and Andhra Pradesh. (ii) Recommended for notification for entire country.
12.	Kodo millet	Jawahar Kodo 62	(i) Recommended for release for cultivation in Madhya Pradesh. Gujarat, Andhra Pradesh and Bihar. (ii) Recommended for notification for entire country.
13.	Kodo Millet	PSC-1	(i) Recommended for release for cultivation throughout the country particularly Madhya Pradesh, Uttar Pradesh, Gujarat, Andhra Pradesh, Karnataka and Orissa. (ii) Recommended for notification for entire country.
14.	Little millet	PRC-3	(i) Recommended for release for cultivation in Madhya Pradesh, Orissa, Bihar, Maharashtra and Karnataka. (ii) Recommended for notification for entire country.
15.	Lentil	Malika (K-75)	(i) Recommended for release for cultivation in whole of Uttar Pradesh as well as North Plain East including Bihar, West Bengal and Central Zones including Madhya Pradesh, Gujarat and Maharashtra. (ii) Recommended for notification for entire country.
16.	Lesser yam	Sree Latha (De-11)	(i) Recommended for release for cultivation in Kerala, Bihar, Maharashtra, Andhra Pradesh and West Bengal. (ii) Already notified vide S.O. 540(E) dated 24-7-1985.
17.	Paddy	Pusa-169	(i) Recommended for release for cultivation under assured irrigated wet land conditions of Haryana, Punjab, Bihar, Western Uttar Pradesh, West Bengal and Karnataka. (ii) Recommended for notification for entire country.
18.	Soyabean	PK-472	(i) Recommended for release for cultivation in Central Zone (Madhya Pradesh, Maharashtra and Gujarat). (ii) Recommended for notification for entire country.
19.	Wheat	HUW-234 (Malaviya Wheat-234)	(i) Recommended for release for cultivation under late sown medium to high fertility and irrigated conditions in North Eastern Plains Zone. (ii) Recommended for notification for entire country.

The detail of the important features of the above varieties is given in Annexure III.

II. Details of the varieties wherein Sponsoring Authorities have been advised to re-submit the proposal alongwith desired information

Sl. No.	Crop	Variety	Remarks
1.	Kulthi	Birsa Kulthi-1	(i) The proposal might be reput up alongwith data of All India Coordinated trials.

Item No. 4: Cosideration of the proposals for notification under Section 5 of the Seeds Act.

26 proposals of different varieties of varoius crops were evaluated for Notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated as under:

Apart from above, proposals in respect of Birsa Priya and Birsa Sweta of French bean and Cowpea respectively were also evaluated.

I. Details of the varieties recommended for notification

Sl. No.	Crop	Variety	Remarks
1.	Bengal gram . . .	Vishwas (Phule G-5)	Recommended for notification for entire country.
2.	Bhindi	Gujarat Bhindi-1	—Do.—
3.	Bajra	Sangam (RHR-1)	—Do.—
4.	Castor	GHC-2 (Gujarat Castor Hybrid-2)	—Do.—
5.	Cotton	G. Cot. DH-7	—Do.—
6.	Cowpea	Birsa Sweta	—Do.—
7.	French bean . . .	Birsa Priya	—Do.—
8.	Maize	NLD White	—Do.—
9.	Maize	Composite Hemant	—Do.—
10.	Barnyard millet . . .	Gujarat Banti-1	—Do.—
11.	Paddy	ACK-5	—Do.—
12.	Paddy	Udaya (CR-190-103)	—Do.—
13.	Paddy	Neela (CR 404-56-1)	—Do.—
14.	Soyabean	PK-416	—Do.—
15.	Sorghum	Gujarat Jowar-36	—Do.—
16.	Sorghum	Kovilpatti-4	—Do.—
17.	Guar	Pusa Naubahar	—Do.—
18.	Cotton	Krishna (AC-122)	—Do.—
19.	Cotton	Pavan (ADB-332)	—Do.—

Details of the important features af the above varieties is given in Annexure IV

II. Details of the varieties wherein Sponsoring Authorities have been advised to re-submit the proposal with additional information as indicated against each variety in the following table

Sl. No.	Crop	Variety	Remarks
1.	Bhendi	Parbhani Kranti	(i) The Sponsoring Authority might re-submit the proposal alongwith views of the Project Coordinator. (ii) After receipt of the above information, The Chairman of the Central Sub-Committee on Crop Standards, Notification and Release of Varities would decide the notification of the variety.
2.	Brinjal	Aruna	—Do.—
3.	Dolichos bean . . .	Deepali Wal	—Do.—
4.	Dolichos bean . . .	Dasara Wal	—Do.—
5.	Onion	Baswan (780)	—Do.—
6.	Paddy	Sarasa (CR 407-19)	—Do.—
7.	Groundnut	G.G. 11	—Do.—

III. Details of the varieties rejected for notification

Sl. No.	Crop	Variety	Remarks
1.	Soybean . . .	Gujarat Soybean-1 (GS-1)	The performance of the varieties was reported to be very poor during Coordinated trials.
2.	Soybean . . .	Gujarat Soybean-2 (GS-2)	

Item No. 5: Recommendations pertaining to new system of testing multiplication and release of the new crop/varieties.

The Committee unanimously approved the recommendations made in the Meeting held under the Chairmanship of Dr. P. V. Shenoi, Additional Secretary, Government of India. The Committee further recommended that all concerned should adopt these recommendations for testing, multiplication and release of the new crop/varieties. It was felt that the recommendations would bring improvement in the existing system of the evaluation of the varieties and their further spread. The list of the recommendations is enclosed as Annexure-II. In the case of varieties/hybrids/composites/synthetics developed by private seed agencies, the procedures for inclusion, testing, evaluation in the coordinated trials and Workshop recommendations, released by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties will be the same. However, the seed production will be organised by the private seed companies themselves due to obvious reasons, instead of through the public agencies.

Item No. 6: Supply of standard seed samples of newly released notified varieties by originating breeder/institute to the seed certification agencies.

The Committee approved the proposal with regard to supply of standard seed samples of newly released/notified varieties by originating breeders/breeding institutes to the seed certification agencies on demand. The quantity to be supplied to the certification agencies would be equal to the quantity specified for submitted samples for various crops/varieties in the Seed Testing Manual. However, further maintenance of the sample and its controlled multiplication would be the responsibility of the concerned certification agencies.

The meeting ended with a Vote of Thanks to the Chair.

ANNEXURE I

List of the participants who have attended the 5th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 28-1-1986 under the Chairmanship of Dy. Director-General (CS), ICAR in Krishi Bhavan, New Delhi

1. Dr. M.V. Rao, — *Chairman*
Dy. Director General (CS)
ICAR, Krishi Bhavan, New Delhi.

2. Shri R.K. Srivastava, — *Member*
Jt. Secretary (PP&S)
Ministry of Agriculture & Rural Development,
Department of Agriculture & Cooperation,
Krisi Bhavan, New Delhi.

3. Dr. Rajendra Singh Tehlan, — ,,
Village & Post Office-Dichaon Kalen,
New Delhi.

4. Shri B.R. Barwale, — ,,
Director, Mahrashtra Hybrid Seed Co. Ltd.,
Bombay.

5. Shri K.S. Money, — ,,
Director of Agriculture,
Rajasthan, Jaipur.

6. Shri D.N. Ram, — ,,
Director of Agriculture,
Bihar, Patna.

7. Shri H.S. Das, — ,,
Director,
Orissa State Seed Certification Agency,
Bhubaneswar.

8. Shri H.L. Trivedi, — ,,
Director,
Gujarat State Seed Certification Agency,
Ahmedabad.

9. Shri J.N. Johri, — ,,
Director,
Rajasthan State Seed Certification Agency,
Jaipur.

10. Shri H. Krishna, — ,,
Director,
Uttar Pradesh State Seed Certification Agency,
Lucknow.

11. Shri K. Phool Singh, — ,,
Director,
Haryana State Seed Certification Agency,
Chandigarh.

12. Shri B.N. Sehgal, — ,,
Chief Seed Certification Officer,
Delhi Administration,
5 & 6 Old Civil Supply Office,
Tishajari Court, Delhi.

13. Shri T.P. Yadava, — ,,
Project Director, (Oilseeds)
I.C.A.R., Hyderabad.

14. Dr. Munshi Singh, — ,,
Head,
Genetics Division, IARI,
New Delhi.

15. Dr. P.K. Agrawal. — ,,
Head,
Division of Seed Science & Technology,
IARI, Pusa, New Delhi.

16. Dr. J.P. Tondon, — ,,
Project Director, Wheat, IARI,
Pusa, New Delhi-12.

Others

17. Dr. Shankar Rao,
Chief (Quality Control,
National Seeds Corporation Ltd.,
Beej Bhavan, Pusa Complex,
New Delhi-110 012.

18. Shri V.V.S. Murthy,
Senior Rice Breeder,
Directorate Rice Research,
Hyderabad.

19. Shri B.S. Verma,
Chief Seed Certification Officer,
Haryana, Chandigarh.

20. Shri N. Pattanayak,
Joint Director Agriculture,
Orissa, Bhubaneswar.

21. Shri M.M. Narang,
Jt. Director Agriculture I/C
H.P. State Seed Certification Agency,
Shimla (HP).

22. Shri P.I. Anjaria,
Jt. Director of Agriculture,
Gujarat, Ahmedabad.

23. Shri Khom Singh,
Dy. Director Agriclture (Seeds),
Chandigarh.

24. Shri P.S. Koparkar,
Dy. Chief Seeds Officer,
Pune.

25. Shri P.R. Aradhya,
Technical Officer,
Maharashtra State Seed Certification Agency, Pune.

26. Shri M.V. Subramaniam,
Jt. Director Agriculture (S&F)
Madras.

27. Shri S. Nanby,
Asstt. Director of Agriculture,
Seed Certification, Coimbatore-30.

28. Shri R.C. Srivastava,
Seed Certification Officer,
M.P. State Seed Certification Agency,
Bhopal.

29. Shri B.M. Sharma,
Jt. Commissioner (Pulses),
Ministry of Agriculutre, Delhi.

30. Dr. S.S. Bains,
Jt. Commissioner (Cotton)
Deptt. of Agriculture & Co.,
Ministry of Agriculture.

31. Shri G.S. Shakhewat,
Senior Agriculturist,
Directorate of Agriculture,
Rajasthan, Jaipur.

32. Shri P. Kar, Agronomist,
Directorate of Agriculture
Mizoram.

33. Shri N.S. Tunwar, — *Member-Secretary*
Officer on Special Duty (QC&T),
Ministry of Agriculture & Rural Development,
Department of Agriculture & Cooperation,
F/118, Shastri Bhavan, New Delhi.

34. Shri M.S. Shukla,
Dy. Seed Officer,
Ministry of Agri. & Rural Dev.
Deptt. of Agri. & Coopn.,
F/218, Shastri Bhavan,
New Delhi.

ANNEXURE II

Recommendation pertaining to new system of Testing, Multiplication and Release of New Crop Varieties

Recently, a meeting was held under the Chairmanship of Dr. P. V. Shenoi, Additional Secretary, Government of India to discuss the present system of testing, multiplication and release of the new crop varieties vis-a-vis the recommendations made by Dr. Borluag's Committee during 23rd All India Wheat Workers Workshop. The meeting was attended by Dy. Director General (CS), ICAR and various Scientists and officials of ICAR and Dept. of Agriculture, Government of India. The recommendations of the Meeting were circulated to all State Goverenments. Agricultural Universities, Project Directors/Coordinator, Central Research Institute and Seed Producing Agencies for information and adoption. The important recommendations of the Meeting are given as under the information of the numbers of the Central Sub-committee on Crop Standards, Notification and Release of varieties:

1. Certain minimum quantity of breeder seed would be specified for each crop at the time of its identification in Workshop. In case the breeder has not produced the minimum quantity of breeder seed the variety would be withheld for recommendation for identification *viz.*, wheat, rice, barley, Jowar, Bajra, and maize 10 quintals. Minor millets 2 qtls. Pulses 10 qtls. Oil seeds 2 qtls. except Groundnut and Soyabean which is ten qtls.

2. After identification of the varieties in Workshop the seed breeder concerned would supply the specified quantity of the seed available with him to SFCI for its further multiplication alongwith the package of practices for different locations would be multiplied on SFCI farms which are spread all over the country in different agro-climatic zones such as Ladhowal (Punjab), Suratgarh (Rajasthan), Jetsar (Rajasthan), Hissar (Haryana), Bahraich (Uttar Pradesh), Kokilabari (Assam), Raibareili (U.P.), Babai (M. P.), Mizoram (two units), Raichur (Karnataka), Chengum (Tamilnadu), Aralam (Kerala).

3. The multiplied seed stock by SFCI would be known as test stock exclusively meant for further trials and demonstration and it would be named as nucleus or breeder seed.

4. The cost of production of the test stock would be born by the Ministry of Agriculture out of the funds available under Central Sector Scheme of the Crops Division.

5. The SFCI would pack the test stock seed material in quantities specified by the Ministry of Agriculture for each crop. SFCI would keep the stock for despatch for adaptive trials and minikit trails as per the supply plan prepared jointly by the concerned AICRIP Director/Project Coordinator and the Crops Division of Ministry of Agriculture/Directors of the Commodity Directorates. Seeds and trials of the All India Coordinated Agronomic Research Projects. The Crops Division will hold consultation with State Government and State Agricultural Universities to finalise the sites for adaptive trials and distribution of minikits for expediting the despatch of stock.

6. To reduce the time lag in the release of variety the adaptive trials and minikit trials would be arranged in the same year from the test stock received from SFCI.

7. The minikit trials and adaptive trials would be conducted with the active cooperation of Directors of Extension of Agricultural Universities and State Departments of Agriculture on Government farms as well as on cultivators fields.

8. In the present system of adaptive trials continued since 1974-75, it has been noticed that conduct and timely report of the data has been a problem. Under the proper report system of testing data must reach to the Ministry of Agriculture on specific dates which would be indicated by the Department of Agriculture, Government of India for each crop.

9. The breeders of the concerned variety will be responsible for providing all the technical guidance monitoring the product of test stock in SFCI farm.

10. The trials (adaptive and minikit) will be monitored by team of Scientists Selected jointly by Crops Division, the Commodity Directorates and Project Director/Project Coordinator of the concerned crops and Scientists from the State Department of Agriculture. The Director of Agriculture of each State will nominate a suitable Senior Technical Officer responsible for organising, conducting and reporting of the trials.

11. The breeders of each variety/parental material of hybrids will be responsible for maintenance and for providing nucleus seed for normal channel of seed multiplication.

12. The date of adaptive and minikit trials on farmer's field National Demonstrations and trials of All India Coordinated Agronomic Research Project will be placed before the Central Sub-committee on Crop Standards, Notification and Release of Varieties alongwith the release proposals.

13. Before a variety is released or notified it should have been tested in AICRIP trials for different yield and other characters.

14. Varieties suitable for a State or specific conditions of a State should also be identified in the Workshop.

15. Public Sale agencies should also be involved in laying out demonstrations like the fertilizer agency (IFFCO) to popularise varieties.

ANNEXURE III

The important features of the varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Fifth Meeting held on 28th January, 1986

1. Name of the Crop	Arhar
Name of the Variety	Bahar
Sponsored by	Rajendra Agricultural University, Bihar.
Parentage/Pedigree	Selection from land races of Tirhut Region.
How the Variety was developed	Through pure line selection method.
Major highlights of the variety	Attractive bold grains highly adaptable, good yielder, tolerant to S.N.V. and comparatively less affected by Heliothis.
Description of the variety	Days to flower : 170 days
	Average height cm : 225 cms
	Average pods per plant : 685
	Average length of pod : 5.5 cm
	Average No. of seeds per pod : 3.2
	Days to maturity : 265 days
	Average grain yield per plant (gms) : 80
	Average weight of 100 grains (gms) : 11.0
	Days of 50% flowering (days from planting to the appearance of flowering in 50% of plants) : Average days of 50% flowering under 170-180
Pod and grain characters	*Pod Characters* : Average No. of pods per plant, 685, pod-length 5.3 cm, silky dark purple coloured.
	Grain characters : Average No. of grains per pod 4-5, globose, bold dark brown in colour.
Reaction to major diseases in the field	Tolerance to important diseases.
Reaction to major pests in the field and also under controlled conditions	Tolerance to important pests.
Agronomic features	No shattering, sowing can be done from mid June to mid July. Seed rate 20 Kg/ha.
Agency responsible for maintaining breeder's seed	Pulses Breeding Section, Tirhut College of Agriculture, Dholi (Muzaffarpur) R.A.U. Bihar.

2. Name of the Crop	Amaranth (*Amaranthus hypochondriacus*)
Name of the variety	Annapurna.
Sponsored by	Coordinator, All India Coordinated Project on Under Utilized/under Exploited crop Plants.
Parentage with details of its pedigree	Pure line selection from a bulk lot collected from Pauri district of U.P. hills.
Description of the variety :	
(i) Plant height	220-225 cm.
(ii) Distinguishing, morphological characters	Stem stout generally unbranched, ridged,leaf broad, dark green, influorescence green with long compact terminal and lateral spikelets, bracts long pointed on maturity influorescence colour turned greenish yellow. Test weight 0.8 to 0.9 gm/1000 seed. Seed surface smooth, popping quality excellent.
(iii) Maturity (range in number) of days	140-145 days.
(iv) Reaction to major disease in field and also under controlled conditions.	Highly resistant to disease (leaf spot) and *Alternaria* sp.
(v) Reaction to major pests	Less susceptible to insect and pest as compared to other entries (Field conditions).

(vi) Agronomic features :
- (a) Resistance to lodging : Resistant to lodging.
- (b) Drought resistance : Frost hardy.
- (c) Frost resistance : Frost Hardy.
- (d) Suitability for early or late sown conditions : Suitable for early sowing (1st or 2nd week of June).

Agency responsible for maintaining pedigree stock : NBPGR, Regional Station, Phagli, Shimla - 171 021.

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3. Name of the Crop : Okra/Bhindi (*Abelmoschus esculentus*).
Name of the Variety : Selection-2.
Sponsored by : National Bureau of Plant Genetic Resources, IARI Campus, New Delhi.
Parentage with details of its pedigree : (Pusa Sawani × Best-1).
(Pusa Sewani × IC 7194).
Semiwild Variety from Punjab.

Description of the variety :
- (i) Plant height : 110 cms. (average).
- (ii) Distinguishing morphological characters : Green fruits, flower having purple petal base colour. Sometime shows branching tendency.
- (iii) Maturity (range in number) of days : Fruits are available 50 days onward for marketing and continuous for 40-45 days.
- (iv) Reaction to major disease in field and also under controlled conditions. : Resistant to yellow mosaic vein.
- (v) Reaction to major pests in field conditions and in controlled conditions including pests of storage : No storage pest for seed.
- (vi) Agronomic features :
  - (a) Resistance to lodging : Yes.
  - (b) Drought resistance : To some extent.
  - (c) Frost resistance : No.
  - (d) Fertilizer response : Yes.
  - (e) Suitability for early or late sown : Yes. Can be sown as summer and kharif crop round the year in Gangetic plain

Agency responsible for maintaining pedigree stock : NBPGR, IARI Campus, Pusa, New Delhi - 12.

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4. Name of the Crop : Bajra.
Name of the variety : PCB-15.
Sponsored by : Punjab Agricultural University, Ludhiana.
Parentage with details of its pedigree : PCB-15 was developed by intermating half-sib progenies of the elite genotypes in the breeding nursery. The population was stabilized by subsequent cycles of random mating.

Description of the variety : The plants have thick stalks and broad leaves. It has delayed senescence as plant parts remain green till ear maturity. Its mean performance in respect of different characters in all-India coordinated trials conducted from 1979-84 is given as under :
- (i) Days to 50% flowering : 53
- (ii) Maturity (days) : 83
- (iii) Plant height (cm) : 197
- (iv) Tiller No. : 2 - 4
- (v) Fodder yield (t/ha) : 6.4

The ears of PCB-15 are compact and about 29 cm long with 7.9 cm girth. The majority of ears are exserted and tapering in shape but some are non-exserted and cylindrical type. The colour of anthers is mostly yellow with a small frequency of purple.

Agency responsible for maintaining breeder's stock : Department of Plant Breeding, PAU, Ludhiana.

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5. Name of the Crop : Cowpea (*Vigna Unquiculata* L Walp).
Name of the variety : UPC - 5287.
Sponsored by : G.B. Pant University of Agril. & Tech., Pantnagar.
Parentage : Single plant selection from the line CK-74-5287, further selection on single pod basis and further bulking on plant basis.

Description of the Variety :

(a) Distinguishing morphological characters : Growth habit erect when young, indeterminate, large leaves, dark green foliage, violet flower colour, pods straw coloured when ripe, seeds lightbrown, square in shape, eye small but distinct.

(b) Plant height : 175-200 cm at 50% flowering.

(c) Days to 50% flowering : 85-90 days.

(d) Maturity : 155-175 days.

(e) Reaction to major diseases : Resistant to cowpea yellow mosaic virus, resistant to pythium-Rhizactonai Fusarium complex and pod rot.

(f) Reaction to insects : Resistant to hairy caterpillar, pod & seed borers and pod sucking bug.

(g) Agronomic features : Very good germination, responsive to nitrogen and phosphorus; suitable for intercroping with maize, sorghum or sugarcane.

Agency responsible for breeder seed and quantity in hand : G.B. Pant University of Agri. & Tech., Pantnagar.

6. Name of the Crop : Colocasia.

Name of the variety : Satamukhi.

Sponsored by : Andhra Pradesh Agricultural University, Rajendranagar (AP).

Parentage with details of its pedigree : Among the local collection from Kovvur.

Description of the variety/hybrids :

(i) Plant height : 50-55 cm.
(ii) Plant spread : Medium.
(iii) Branching habit : Free suckering 6-7 tillers.
(leaf arrangement) : Alternate.

Distinguishing morphological characters :
- Leaf shape : Sagitate
- Leaf colour : Dark green.
- Leaf surface : Glossy.
- No. of leaves/plant : 10-15/plant.
- Petiole : 12-15 cm long, uniformly light purple, channel open with purple colour petiole margin.

Maturity (range in no. of days) (Plant to tuber harvest) : 180 days.

No. of day for initiation of tuberization : 70 days.

Agronomic features : This variety is moderately resistance to flood, but highly susceptible to adverse environmental conditions.

Agency responsible for maintaining breeder's stock : Horticulturist (Veg.), College of Agriculture, A.P.A.U., Rajendra Nagar, Hyderabad - 38.

7. Name of the Crop : Kodo millet (*Paspalum scrobiculatum*).

Name of the variety : Jawahar Kodo 41.

Sponsored by : All India Coordinated Research Project for the improvement of minor millets, College of Agriculture, Rewa (MP) - 486 004.

Parentage with details of its pedigree : Single plant selection from a germplasm collected from Maulapurwa Village of Chhatarpur district of MP.

Description of the variety:

(a) Effective tillers : 8.2 to 15.2.

(b) Plant height (cm.) : 57 to 64.

(c) Fifty percent bloom : 61 - 74 days.

(d) Maturity (days) : 95 - 108.

(e) Reaction to major pests in field : Moderately resistant to shootfly.

(f) Reaction to major diseases in field : Free.

(g) Agronomic features :
- (i) Sowing condition : Suitable for early and normal sowing conditions.
- (ii) Lodging condition : Moderately resistant.
- (iii) Drought : Moderately resistant.

Agency responsible for maintaining breeder's stock : Coordinating unit AICRIP College of Agriculture, Rewa.

8. Name of the Crop : Kodo (*Pososlum scrobiculatum*).

ne of the variety Jawahar Kodo 62.

Sponsored by . Coordinating unit. All India Coordinated Millet Improvement Proj c
College of Agriculture, Rewa (MP) - 486 004.

Parentage with details of its pedigree : Single plant selection for germplasm No. 62.

Description of the variety :

(a) Effective tillers (no) : 7.4 to 13.6

(b) Plant height (cm) : 42 to 57

(c) 50% bloom (days) : 60 - 67

(d) Maturity (days) : 95 to 105

(e) Reaction to major pests in field : Moderately resistance to shootfly.

(f) Reaction to major diseases in field : Not noticed.

(g) Agronomic features : Sowing condition : Suitable for early and normal sowing condition
Lodging : Resistance.
Drought : Resistance.

Agency responsible for maintaining breeder's stock : Coordinating unit, AICMIP, College of Agriculture, Rewa - 486 004.

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9. Name of the Crop : Kodo Millet (*Paspalum scrobiculatum* L.).

Name of the veriety : PSC-1.

Sponsored by : Coordinating Unit, All India Coordinated Millets Improvement Project
College of Agriculture, Pune : 411 005.

Parentage with details of its Pedigree : Single plant selection from IPS 115.

Description of the variety :

(a) Effective tillers (No.) : 1.4 to 16

(b) Plant Height (cm) : 38 to 60

(c) Days to 50% bloom : 59 to 70

(d) Days to maturity : 90 to 137

(e) Reaction to major pests in field : Resistant (less than 10%) to shootfly.

(f) Reaction to major diseases in field : Hightly resistant to smut.

(g) Agronomic features : Sowing conditions : Suitable for early and late sowing.
Lodging : Resistant
Drought : Moderately resistant.

Agency responsible for maintaining breeder's stock : Coordinating Unit, AICMIP, College of Agri., Pune - 411 005.

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10. Name of the Crop : Little Millet (*Panicum miliare*).

Name of the variety : PRC-3.

Sponsored by : Coordinating Unit, All India Coordinated Millets Improvement Projec
College of Agri., Pune - 411 005.

Parentage with details of its pedigree : Single plant selection from GPM 97.

Description of the variety :

(a) Effective tillers (no.) : 1.8 to 10.7

(b) Plant height (cm) : 56 to 98

(c) 50% bloom (Days) : 39 to 62

(d) Maturity (days) : 61 to 93

(e) Reaction to major pests in field : Moderately resistant to shootfly.

(f) Reaction to major diseases in field : Not noticed.

(g) Agronomic features : Sowing condition : Suitable for early and late sowing.
Lodging : Resistant.
Drought : Moderately resistant.

Agency responsible for maintaining breeders' stock : Coordinating Unit, AICMIP, College of Agri., Pune : 411 005.

11. Name of the Crop	Lentil (*Lens culinaris*, Medic).
Name of the variety	Malika.
Sponsored by	Dr. J.S. Sindhu, Senior Scientist-cum-Economic Botanist (Legumes).
Parentage with details of its pedigree	Selection from germplasm.
Description of the variety :	
(i) Plant height	(40 - 45 cms).
(ii) Distinguishing morphological characters	Maturity (135 - 140 days), foliage green, semi-spreading, medium plant height (40-45 cms) flower violet, pod green in early stage and brown at maturity; seed bold and mottled grey (27.0 gms/1,000 seeds); protein 25.7%.
(iii) Maturity (Range in number of days) seedling/transplanting to flowering/seed to seed.	The variety takes 80-90 days to flower and the crop matures in 135-140 days.
(iv) Reaction to major diseases	Malika is moderately resistant to wilt and rust diseases.
Agency responsible for maintaining breeders' stock	C.S. Azad University of Agriculture and Tech., Kanpur - 203 082.

12. Name of the Crop	Lesser yam (*Dioscorea esculenta*).
Name of the variety	Sree Latha (De-11).
Sponsored by	Central Tuber Crops Research Institute, ICAR, Sreekariyam, Trivandrum-695 017, Kerala.
Parentage with details of its pedigree	Selection from a collection viz. De-11.
Description of the variety :	
a) Plant height/plant spread/stem girth/branching habit.	2.5 to 3 meter height, less spreading and branching.
Distinguishing morphological characters, i.e. leaf shape/leaf colour/no. of lobes.	Vine, twining on support, green vine with small prickles, leaf cordate, simple and entire. Petiole brownish, green and swollen at both ends.
Maturity (range in no. of days) Seedling/planting to tuber harvest.	220 - 240 days.

13. Name of the Crop	Paddy (*Oryza sativa* L.).
Name of the variety	Pusa, 169.
Sponsored by	Dr. Munshi Singh, Head, Division of Genetics, I.A.R.I., New Delhi - 12.
Parentage with details of its pedigree	IR 28 × Pusa 140 - 56 Pusa 169-33-1-1-1
Description of the variety :	
(a) Plant height	85-90 cms.
(b) Distinguishing morphological characters	Relatively short, dark green leaves flag leaf intermediate (4500 pubescent margin cilliated, slow senescenes, stigma colourless husk colour-straw white apiculus straw white and straight; rachilla very short, panicle intermediate) angle of primary branches on panicle intermediate, panicle density intermediate, fully exserted.
(c) Maturity	125 days from seed to seed.
(d) Reaction of major diseases in the field and also under controlled conditions.	Moderately resistant to major diseases of rice.
(e) Reaction to major pests	Moderately resistant to major pests of rice.
Agency responsible for maintaining breeders' stock	Division of Genetics, IARI, New Delhi.

14. Name of the Crop	Soybean (*Glycine max*, L.).
Name of the variety	PK-472.
Sponsored by	G.B. Pant University of Agri. & Tech., Pantnagar.
Parentage	Hardee × Punjab-1.
Description of variety :	
(a) Distinguishing morphological characters	Erect, determinate compact plant, dark green foliage, white flowers, grey pubescence, yellow seed, light brown hilum.
(b) Plant height	35-45 cms.
(c) Maturity	About 98 days.

Reaction to major diseases	Resistant/highly tolerant to yellow mosaic, resistant to bacterial pustules, leaf spots and minor infection by charcoal rot.
Reaction to insects	Least susceptible to girdle beetle (a serious insect in central zone and moderately susceptible to defoliators as compared to susceptible reaction in Gaurav.
Agency responsible for breeder seed production and quantity of seed in hand.	G.B.P.U.A & T., Pantnagar and other institutions (Parbhani, Sehore), Breeder seed Prodn. programme has been undertaken at Pantnagar and Parbhani. Approximate quantity 10 qtls.

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15. Name of the crop	Wheat (*Triticum aestivum*).
Name of the variety	HUW-234 (Malaviya Wheat-234).
Parentage and breeding method used	(HUW-12 × Sparrow) × HUW-12 Pedigree Method.
List (at least two) important morphological features of the proposed variety.	(1) Double dwarf (86-95 cms.) stiff straw; broad and good green leaves. (2) Medium long, compact, broad, white awned cylindrical spike. (3) Early in maturity, maturing period similar to Sonalika.
Salient features of the variety, if any	Double dwarf (86-95), staiff straw, broad and green leaves, medium long, compact, broad, white awned spike, early in maturity, maturity period similar to Sonalika. Resistant to all the diseases both under natural and artificial conditions. Amber hard, lustrous medium bold grains.
Agency responsible for maintaining the breeder seed	Deptt. of Genetics and Plant Breeding, Institute of Agricultural Sciences Banaras Hindu University, Varanasi.

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16. Name of the Crop	Bajra or pearl Millet (*Pennisetum americanum* L.) Leeke
Name of the variety	MH-179 (ICMH-451).
Sponsored by	All India Coordinated Millets Improvement Project, (AICMIP), College of Agriculture, Pune - 411 005.
Parentage with details of its pedigree	ICMH 451 is a hybrid made by crossing a pollinator LCSN 72-1- known as ICP 451 on male-sterile line 81A, (ICMA 1).
Description of the variety :	
(a) Plant height	175-180 cms.
(b) Distinguishing morphological characters :	
(i) Leaf	Medium width.
(ii) Stem	Medium thick.
(iii) Ear Head	Medium-long (25-30 cm.), semi-compact mostly bristled.
(iv) Glumes	Brown
(v) Seed	Medium size (9-10 g 1000^{-1}).
(c) Maturity (range in number of days)	85-90 days.
(d) Reaction to major diseases	Resistant to downy mildew.
(e) Reaction to major pests	Not tested.
(f) Agronomic features :	
Lodging	Average resistance to lodging.
Drought and salinity	Does well under drought, not tested for salinity.
Suitable for early or late plantings	Both (early and late).
Agency responsible for maintaining breeders' stock	International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).
Description of the Pollinator ICP 451	

(a) Plant height	165-170 cm.
(b) Distinguishing morphological charancters :	
(i) Leaf	Broad leaves.
(ii) Stem	Medium-thick
(iii) Ear Head	Semi-Compact, mostly (90% plant bristled candle shape)
(iv) Glumes	Brown
(v) Seed	Medium size 8-9 g per 1000 globular, light grey.
Maturity (range in number of days)	85-90 days.
Reaction to major diseases	Resistant to downy mildew.

Description of Male-sterile 81A, ICMA 1 :

(a) Plant height : 75-80 cms.

(b) Distinguishing morphological characters : Leaf : Narrow, very dense canopy.

Stem : Thin, semi-spreading type, internodes fully covered with leaf sheath and not visible. Sturdy plant type.

Ear Head : Thin, slightly taping towards the tip, non-bristled, compact, well exserted.

Glumes : Brown and small.

Seed : Light grey, round, about 7 g 1000^{-1} seeds.

Maturity (range in number of days) : 85-90 days.

Reaction to major diseases : Resistant to downy mildew.

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17. Name of the Crop : Bajra or Pearl Millet (*Pennisetum americanum* (L.) Leeke.

Name of the variety : MH-180 (ICMH 501).

Sponsored by : All India Coordinated Millets Improvement Project (AICMIP), College of Agriculture, Pune-411 005.

Parentage with details of its pedigree : ICMH 501 is a hybrid made by crossing a dwarf pollinator (B 282 ×3/4 Ex Bornu-100)-11-9-2, known as ICMP 501, on male-sterile line 834A,(ICMA4)

Description of the hybrid variety :

(a) Plant height : 185-190 cms.

(b) Distinguishing morphological characters :

- (i) Leaf : Well separated and medium breadth.
- (ii) Stem : Medium-thick.
- (iii) Ear Head : Long (25-28 cm), bold, semi-compact, bristled and taparing towards the tip
- (iv) Glumes : Purple.
- (v) Seed : Large (12-13 g 1000^{-1}), globular and dark grey.

(c) Maturity (range in number of days) : 85-90 days.

(d) Reaction to major diseases : Resistant to downy mildew.

(e) Agronomic features : Lodging : Average resistance to lodging.

(f) Suitable for early or late plantings : Does better with early planting.

Agency responsible for maintaining breeder's stock : International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

Description of the Pollinator ICMP 501 :

(a) Plant height : Dwarf (85-90 cms.).

(b) Distinguishing morphological characters :

- (i) Leaf : Semi-erect, purple leaf sheath at the base of the plant.
- (ii) Stem : Spreading type, medium-thick, covered with leaf sheath and internodes invisible.
- (iii) Ear Head : Long (25-30 cm) bold (girth 10-12 cm), tapering towards the tip and semi compact.
- (iv) Glumes : Purple.
- (v) Seed : Globular, medium size (8-9 g 1000^{-1}), light grey.

(c) Maturity (range in number of days) : 95-105 days.

(d) Reaction to major diseases : Highly resistant to downy mildew.

(e) Agronomic features : (i) Lodging : Highly resistant to lodging.

Description of the Male-sterile line 834A, ICMA 4 :

(a) Plant height : Medium (150-160 cm).

(b) Distinguishing morphological characters :

- (i) Leaf : Broad.
- (ii) Stem : Medium-thick.
- (iii) Ear Head : Loose, bristled, medium length (15-20 cm), tapering towards the tip.
- (iv) Glumes : Purple.
- (v) Seed : Seeds are round, bold (9-10 g 1000^{-1}) and dark grey.

(c) Maturity (range in number of days) : 75-80 days.

(d) Reaction to major diseases : Highly resistant to downy mildew.

(e) Agronomic features : Lodging : Resistant to lodging.

18. Name of the Crop : Bajra (Pearl Millet) *Pennisetum typhoides* (BurmF).

Name of the Variety : MH-182.

Sponsored by : Coordinating Unit, All India Coordinated Millets Improvement Project, College of Agriculture, Pune - 411 005.

Parentage with details of its pedigree : MS 732 A × PNBM 83099.

Description of Hybrid :

(a) Plant height (cm) : 170-180.
(b) No of tillers/plant : 2-5.
(c) Panicle length (cm) : 20-25.
(d) Grain colour : Light grey.
(e) Grain size : 1000 grain weight (g) = 7.5—8.0.
(f) Distinguishing morphological characters : A tall hybrid with moderately thick stem, green leaves and bulged nodes.
(g) Maturity (range in No. of days) : Days to flowering : 55-60
Days to maturity : 85-90
(h) Reaction to major diseases in field and under controlled conditions. : Resistant to downy mildew (0.4 per cent in MH 182 as against 14.8 per cent in BJ-104). Moderately resistant to ergot.

Agronomic features : Resistance to lodging : Non lodging.
Tolerance to drought : Tolerant.

Description of the parents :

	MS 732 A	*PNBM 83099*
Origin	Coimbatore	Pune
Plant height (cm)	80-85	150-155
Days to flower	55-60	55-60
Maturity (Days)	80-85	85-90
Effective tillers (No.)	3-6	3-5
Ear length (cm)	18-20	18-20
Ear diameter (cm)	6.3 - 7.6	7.0 - 8.6
1000 grain weight (g)	7.0 - 7.5	7.5 - 8.0

Agency responsible for maintaining the breeders seed : All India Coordinated Millets Improvement Project, College of Agriculture Pune-411 005.

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19. Name of the Crop : Arhar or Pigeonpea (*Cajanus cajan* (L.) Millsp.).

Name of the variety : ICPL-87 (Pragati).

Sponsored by : All India Coordinated Pulses Improvement Project, Directorate of Pulses Research, Kalyanpur, Kanpur-208 024 (UP) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru (AP) 502 324.

Pedigree : ICPX 73052 (T 21 × JA 277) 1-211-1-1-HIDT 2-HB-B-HB.

Description of variety :

(a) Plant height : Medium averaging 82 cm or 25 cm shorter than UPAS 120.
(b) Distinguishing morphological characters :
(i) Plant type : Semi-spreading and determinate.
(ii) Stem : Green colour.
(iii) Leaves : Narrow and dark green usually remaining dark green while are maturing.
(iv) Flowers : Yellow.
(v) Pods : Large pods are borne in loose drooping clusters at the top of the plant. Colour at grain filling stage is green with red purple streaks.
(vi) Seeds : Large light brown colour. Seeds round in outline but slightly flattened.
(c) Maturity : About 4 days later than UPAS 120 in Peninsular India
(d) Reaction to major diseases : Tolerant to wilt.
(e) Reaction to major pests : Susceptible to *Heliothis* damage but compensates strongly in the second flush and responds well to insecticide spray.

Agency responsible for maintaining of breeder's Seed : ICRISAT, Patancheru P.O., Andhra Pradesh - 502 324.

ANNEXURE IV

Important features of the Varieties recommended for Notification in the 5th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop	:	Bengal Gram (*Cicer arietinum* L.).
Variety	:	Vishwas (Phule G-5).
Breeder/Institute responsible for maintaining breeder's stock	:	Plant Breeder (Pulses), MPAU, Rahuri.
Parentage	:	B-110 × N-31.
Description of the variety	:	Plant height is 46.14 cms., erect tall, matures in 115 to 120 days, green with purple pigmentation stem, dark green, broad leaflets, pink flowers, bold single per axil pods, suitable for irrigated areas. Significantly large number of effective root nodules, which helps in increasing yield and fixing atmospheric nitrogen thus improve soil fertility. Good for Chana & Dal.
Two identifiable and distinguishable morphological characteristics of the variety	:	Seeds are smooth, round & bold with 100 seed wt. is 275 gms., grain yield is 2400-2800 kgs./ha, responsive to irrigation & higher seed rate & close spacing. Suitable for early and optimum sowing, due to different plant type, easy to maintain genetic purity in seed prod. programme.
Yield :		
(a) Commercial Product	:	24.00 to 28.00 qtls./ha.

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2. Crop	:	Bhindi (okra)
Variety	:	Gujarat Bhindi-1.
Breeder/Institute responsible for maintaining breeder's stock	:	Asstt. Research Scientist (Horti.), Vegetable Research Scheme, Gujarat Agricultural University, Junagadh campus, Junagadh.
Parentage	:	The variety viz. Gujarat Bhindi-1 has been selected at Junagadh from the seed sample of a line derived from Pusa Sawani × IC 7194 received from the Enwhile Department of Plant Introduction, IARI, New Delhi.
Description of the variety	:	(a) Average plant height : 60 cm in summer and 90 cm in monsoon. (b) Plants of Gujarat Bhindi-1 are erect type having solitary green with slightly purple tinges on the stems, leaves are broad and medium in size with dark green colour and purple tinges on the veins. Flowering starts at 4-5 internode, petal colour chromate yellow with violet brownish ghost spot in the centre. It has light green pods with five ridges, Tender and marketable green pods are on an average 14 to 15·5 cm long. The pods are characterised to remain tender even if the picking is delayed for one or two days. The seeds of Gujarat Bhindi-1 are typically bullet (capsule) shaped, round with dark olive green colour and comparatively bigger in size than ball shaped round and light olive green colour seeds of Pusa Sawani, Weight of 1000 seeds of Gujarat Bhindi-1 is on an average 69 gms as compared to that of 61 gms of Pusa Sawani. (c) Maturity (range in number of days from sowing to first picking). Picking of marketable fruits (Pods) start on an average : (i) Days to 50% flowering : 40 days. (ii) Days to maturity : First picking of marketable pods starts after 55 to 60 days after sowing.
Two identifiable and distinguishable morphological characters of variety.	:	(1) Plant stature is erect having solitary green with slightly purple tinges on the stem. (2) Leaves are broad and medium in size with dark green colour and purple tinges on the veins. (3) Pods are light green with five ridge having average length of 14 to 15 cm girth 6-7 cm near the centre and the base. (4) The seeds of Gujarat Bhindi-1 are typically bullet (capsule) shaped, round wit dark olive green colour and comparatively bigger in size than ball shaped round and light olive green seed of Pusa Sawani.
Yield of commercial product *i.e.* marketable pods	:	The variety Gujarat Bhindi-1 give average yield of 8332 kg/ha i.e. 17% more than presently recommended variety Pusa Sawani.

3. Crop : Bajra (*Pennisetum Americanum*) (L) Leek.

Variety : Sangam (RHR-1).

Breeder/Institute responsible for maintaining breeder stock : Professor (Bajra Breeding), Mahatma Phule Agricultural University, Rahuri, District : Ahmednagar, Pin : 413 722.

Parentage : Developed by effecting selection in F2 & F3 segregating material received from the ICRISAT during the year 1975.

Description of the variety : It is medium tall in height (152 to 195 cms) with 4 basal tillers on an average. It mature in 85 days. The grain medium bold, deep grey in colour. Ear heads are compact cylindrical in shape seeds exposed resistant to mould.

Two identifiable & distinguishable morphological characterstics of the variety :
(1) Medium deep grey exposed grain.
(2) Cylindrical earhead with compact spike density.

Yield :
(a) Commercial production : 20-25 qtls.
(b) Seed : 18 to 20 qtls./ha.
(c) Fodder : 5 to 6 T/ha. (20% increase over BJ. 104).

4. Crop : Castor (*Ricinus Communis*) L.

Variety : GCH-2 (Gujarat Castor Hybrid-2).

Breeder/Institute responsible for maintaining the breeder stock : Research Scientist (Oil seeds), Gujarat Agril. University, Junagadh (Guj.).

Parentage : VP-1 × JI-35.

Description of the variety :

		VP-F (Female)	*JI*-35 (Male)
Days to 50% flowering	:	50-55	58-62
Maturity days of main spike	:	128	130
Maturity days of whole plant	:	200	209
No. of internodes upto main spike	:	12-18	15-21
Ht. upto main spike (Cm)	:	30.0	77.0
No. of effective branches	:	7.4	4.4
Seed colour	:	Brown	Brown
Stem colour	:	Green	Green (with reddish tinge on stem)
Bloom	:	Triple	Double
Leaf Shape	:	Cup	Flat
1000 seed weight (gm)	:	250-270	230-255
Oil %	:	47.5	50.4

Different characters of Castor hybrids :

		VHB-150	*GAUCH*-1
Days to 50% flowering	:	66	54
Maturity days of main spike	:	100-120	96-114
Maturity days of whole plant	:	200-212	200-215
No. of internodes upto main spike	:	14-18	14-18
Length of main spike (cm.)	:	40.66	37.83
Ht. upto main spike (cm.)	:	60-70	60-65
No. of effective branches	:	8.5	10.0
Seed colour	:	Dark brown	Dark brown
Stem colour	:	Green (with reddish tinge on stem)	Green
Bloom	:	Triple	Triple
Leaf shape	:	Flat	Flat
1000 seed wt. (gms.)	:	240-274	243-279
Oil %	:	46.8 - 47.8	46.4 - 48.3

Yield :

		GCH-2	GAUCH-1
Commercial product Seeds	:	1747 kg/ha.	1546 kg/ha.

5. Crop : Cotton.

Variety : G. Cot. DH-7.

Breeder/Institute responsible for maintaining breeder's stock : Research Scientist (Cotton), Main Cotton Research Station, Gujarat Agril. University, Surat - 395 007.

Parentage : Sujay 3943 × G. 27.

Description of the variety :

	G. Cot DH-7	*Sujay (3943)*	*G. 27*
Plant height	150-200 cms.	100-200 cms.	130-150 cms.

Distinguishing morphological characters :

	G. Cot DH-7	*Sujay (3943)*	*G. 27*
Foliage	Light green hairy almost all leaf sected with 5 lobes, lob cut is more than ½. The colour of main stem as well as branches is light red.	Light green broad and hairy leaves.	Dark green, light hairy leaves almost all leaves sected with 5 lobes Lob. cut is more than ½. The colour of the main stem and branches is dark red. Red coloured calyx, seen with dark pigmented bracts.
Habit	Erect with 8-12 effective monopodia branches start from 15-20 nodes.	Monopodial dwarf & bushy, monopodia at acute angle on major stem formed down shape.	Erect with 6-8 effective monopodia sympodial branches start at 10 to 20 nodes.
Flower	Petal light red in colour and calyx red, bracts are green with red tinge.	Corolla yellow with dark purple spot.	Petals are whitish reddish in colour smaller in size. At the tip the petals are more reddish than middle portion.
Boll Character	Boll are pitted with red pigmented surface slightly bended break at the tip.	Medium in size shape cylindrical and surface pitted.	Smaller in size with pitted and dark red pigmented surface mostly three locks small bended bick at the tip.
Petal spot	Dark red petal spot present.	Present.	Present.

Two indentifiable and distinguishing morphological characteristics of the variety : New hybrid G. Cot. DH-7 is a cross between G. herbaceum and G. arboreum. The genetic purity test in this connection is based on three major characters differences :

(i) presence of nectar on leaves.

(ii) stem redness.

(iii) colour of pulvinous point.

(i) The female has nectar on leaves. The male is nectarless. The hybrid G. Cot DH-7 has nectar on leaves, so it can be easily distinguished from male.

(ii) The female has complete green stem colour. The male has complete red stem colour. The hybrid G. Cot DH-7 has red colour for about 2/3 portion of the stem, remaining portion being lighter or faint in colour. Up to cotyledon.

(iii) The female has green pulvinous point while the male has red pulvinous point. The hybrid has red pulvinous point. For complete information on genetic purity test it will be necessary to wait up to 15 to 20 days for stem and pulvinous point colour study and 30 to 40 days for nectarilessness study.

Yield :

(a) Commercial product (seed cotton in kgs/ha) : 1515 kg/hect.

(b) Seed : About 900 kg/ha. The seed of the commercial product is not utilizable as seed.

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6. Crop : Cowpea (*Vigna sinansis*).

Variety : Birsa Sweta.

Breeder/Institute responsible for maintaining the breeder's stock : Horticulture Department, Birsa Agril. University, Ranchi.

Parentage : CN 73-1 (Selection from cultivator plot).

Description of the variety : *Varietal characters :*

A. Plant characters :

(i) Height : 1.5 to 2.0 meters.

(ii) Colour of foliage : Dark green.

(iii) Habit : Indeterminate.

(iv) Flower colour : Whitish blue.

(v) Av. number of primary branches : 7 to 8.

B. Pod characters :

(i) Pod colour : White

(ii) Pod size : 28.50 cm × 1.10 cm.

(iii) No. of seeds/pod : 14.8 seeds.
(iv) 100 seed weight : 15.5 gm.
(v) Seed colour : Bicolour (Dark brown with light yellow). The pods are very fleshy and soft and very suitable for vegetable purpose. From a good crop 10 to 12 pickings can be easily obtained.

C. Maturity :
(i) Days to 50% flowering : 45 to 47 days.
(ii) Days to Ist picking from sowing : 55 to 57 days.
(iii) Days to last picking from sowing : 90 days.
(iv) Duration of picking : 6 weeks.
(v) No. of pickings : 9

Two identifiable and distinguishable morphological characteristics of the variety: (1) Pods characteristics are fleshy, white and size (28·5 cm × 1.10 cm).
(2) Indeterminate type.

Yield :
(a) Commercial product (Green Pod) : 145 qtls./ha.

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7. Crop : French bean (Pole type) (*Phaseolus vulgaris*).
Variety : Birsa Priya.
Breeder/Institute responsible for maintaining the breeder's stock : Horticulture Department, Birsa Agril. University, Ranchi.
Parentage : Ranchi local (Selection from local germ-plasm).

Description of the variety : *Varietal characters :*

(A) Plant characters :
(i) Height : 2 to 2.5 mts.
(ii) Colour of foliage : Green.
(iii) Habit : Creeping.
(iv) Flower colour : White.

(B) Pod Characters :
(i) Pod colour : Light green to green.
(ii) Pod size : 14×1.2 cms.
(iii) No. of seeds/pod : 7.2
(iv) 100 seed weight : 18 gms.
(v) Seed colour : White.

(C) Maturity :
(i) Days to 50% flowering : 38 to 40 days.
(ii) Days for Ist picking from sowing : 45 to 52 days.
(iii) Days for last picking from sowing : 95 to 100 days.
(iv) Duration of picking : 35 to 45 days.
(v) No. of picking : 8 to 10.

Two identifiable and distinguishable morphological characteristics of the variety. : (1) Colour of flower : White.
(2) Pod shape : Round straight fleshy & stringless.

Yield :
(a) Commercial product : Kharif : 90 to 100 qtls/hec. Maximum 110 qtls./hec.
Rabi : 70 to 80 qtls./hec.

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8. Crop : Maize
Variety : NLD White
Breeder/Institute responsible for maintaining breeder's stock : Department of Agriculture, Government of Sikkim.
Parentage : Not known as the line was received in ICAR trial during 1976-77.
Description of the variety : It is a white composite, maturing in 110-120 days. Plant is tall with average height of 2.32 metres and dark green in colour. The average number of cobs per plant is 1.46 and average 1000-Kernel weight is 420.04 gm.
Two identifiable and distinguishable morphological characteristics of the variety : Kernel is white in colour and dent to semident in shape. The husk cover is tight and nearly full with slight open tip.

Yield :
Commercial Product : 65-70 qtls./ha.
Seed : 55-60 qtls./ha.

9.	Crop	Maize.
	Variety	Composite Hemant.
	Breeder/Institute responsible for maintaining breeder's stock	Chief Scientist (Maize), Rajendra Agril. University, Pusa.
	Parentage	Dholi 7744 (AEO × Tupen).
	Description of the Variety	A white grained, semident composite suitable for rabi season.
	Two identifiable and distinguishable morphological characteristics of the variety	The stem base has light purple colouration, dark green leaves with wavy margin, white semident large sized grains.
	Yield :	
	Commercial Product	7-8 tonnes per hectare.
	Seed	About 5 tonnes per hectare.

10.	Crop	Minor millets (*Echinochola frumetacea*).
	Variety	Gujarat Banti-1.
	Breeder/Institute responsible for maintaining breeder's stock	Research Scientist (Sorghum), AICSIP, GAU, Surat.
	Parentage	F-2 is a selection from the segregating material of Banti.
	Description of the variety	The grain colour of this variety is yellowish white and preferred by the tribals. The new variety Gujarat Banti-1 has good adaptability in the hilly region of South Gujarat. It has given consistently 18.9% higher yield than the local during 1978-79 to 1983-84. The variety is medium tall maturing in 85 days. It is suitable for sowing with the onset of monsoon.
	Two identifiable and distinguishable morphological characteristics of the variety	The panicle is long with yellowish white grain which preferred by the Adivasi. It is a medium tall variety.
	Yield :	
	Commercial product	2000 kg/ha.
	Seed	1500 kg/ha.

11.	Crop	Paddy.
	Variety	ACK-5.
	Breeder/Institute responsible for maintaining breeder's stock	Botany Division, College of Agri., Kolhapur & Agril. Res. Station, Radhanagari.
	Parentage	D-6-2-2 × IR-8 (D-6-2-2 local type).
	Description of the variety	Plant height is 60 to 65 cms. matures in 120 to 125 days for direct sown and for transplanting 110 to 115 days. Non lodging, non shettering, easy threshable, short bold, coarse type, without white belly grain, non sticky and tasty.
	Two identifiable and distinguishable morphological characteristics of the variety	Dark green foliage, semi-dwarf, good tillering & short bold grains without white belly coarse type. 1000 grain weight, 22-24 gm. Gives higher 11.1% yield than check. Grain & fodder/straw of this variety is very good.
	Yield :	
	Commercial production	48.30 qtls./ha.
	Seed	

12.	Crop	Paddy.
	Variety	Udaya (CR 190-103).
	Breeder/Institute responsible for maintaining breeder's stock	Central Rice Research Institute, Cuttack, Orissa.
	Parentage	C.R. 129-118 × CR 57-49-2.
	Description of the variety	Height 100 cms, Medium tall with early vigour, Plant parts green long bold grain.
	Two identifiable and distinguishable morphological characteristics of the variety	Medium tall with early vigant and grain long bold.
	Yield :	
	Commercial product	
	Seed	4.8 to 5.5 tonnes/ha.

13. Crop : Paddy.
Variety : Neela (CR 404-56-1).
Breeder/Institute responsible for maintaining the breeder's stock : Central Rice Research Institute, Cuttack, Orissa.
Parentage : CR 94-1512-6 × Pusa 2-21.
Description of the Variety : 75-80 cms, Semi-dwarf, erect deep green with medium bold grains of white kernel.
Two identifiable and distinguishable morphological characteristics of the variety. : Semi dwarf, erect deep green with medium bold grains of white kernel.

Yield :
Commercial product .
Seed : 3.1 tonnes per hect.

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14. Crop : Soybean (*Glycine max* L.).
Variety : PK-416.
Breeder/Institute responsible for maintaining the breeder's stock : Soybean Breeder, G.B. P.A.U. & T., Pantnagar.
Parentage : UP SM - 534 × S — 38.
Description of the variety including identifiable morphological characteristics. : Erect, determinate, Tawny pubescence, white flowers, 60-70 cm Plant height 115-120 days maturity yellow seed coat, brown hilum, 12.50 g 100 seed weight, 23.03% oil 41.56% protein.

Yield :
Commercial product : 32-38 q/ha.
Seed : 27-33 q/ha.

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15. Crop : Sorghum.
Variety : Gujarat Jowar 36.
Breeder/Institute responsible for maintaining the breeder's stock : Research Scientist (Sorghum), AICSIP, GAU, Surat.
Parentage : GJ 36 is a stable variety suited for kharif and late kharif sowing developed through hybridization (2219A × BP 53) × BP 53.
Description of the variety : Variety is medium tall (145-155 cm) maturing in 110-115 days. The peduncle is medium and straing bearing with spindle shape semi compact panicle with pearly white grains. It is moderately resistant to shootfly and grain mould. This variety has given 20.53% higher grain yield than GJ 108.
Two identifiable and distinguishable morphological characteristics of the variety : Earhead is semi compact grains are pearly white bold and attractive would fetch more prices. The stem and leaves are tan in colour.

Yield :
Commercial product : 2500 to 3000 kg/ha.
Seed : 1500 to 2000 kg/ha.

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16. Crop : Sorghum.
Variety : K-4 (Kovilpatti-4).
Breeder/Institute responsible for maintaining the breeder's stock : Cotton & Millet Experiment Station, Tamilnadu Agricultural University, Kovilpatti.
Parentage : Derivative of the cross Sorghum CO 18 × K 2.
Description of the variety : *Morphological features :*
(i) Plant height : 185 (cm).
(ii) Sheath Colour : Reddish purple.
(iii) Node colour : Green glabrens
(iv) Midrib : Dull White.
(v) Earhead shape : Ovate with wavy peduncle.
(vi) Compactness : Compact.
(vii) Grain colour : Pearly white.

Two identifiable and distinguishable morphological characteristics of the variety :
(i) Midrib : Dull white.
(ii) Earhead shape : Ovate shaped compact earhead.
(iii) Grain colour : Pearly white.

Yield :
Commercial product :
Grain (irrigated crop) : 3100 kg/ha.
Straw (irrigated crop) : 10000 kg/ha.

17. Crop	Guar
Variety	Pusa Naubahar.
Breeders/Institute responsible for maintaining the breeder's stock	National Bureau of Plant Genetic Resources, New Delhi.
Parentage	Pusa Sadabar × Pusa Mausmi.
Description of the variety	Pusa Naubahar has been selected from the cross progeny of Pusa Sadabahar × Pusa Mausmi. Adapted to all seasons. Plant height 100 cm, single stemmed, non branched photo-insensitive. Pods 12—15 cm long, light green soft and very meaty with profuse bearing in branches. Seed to seed 120—125 days, for vegetable 65—100 days.

सत्यमेव जयते

Proceedings of the Sixth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 16th May, 1986 under the Chairmanship of DDG (CS), ICAR

The list of the participants is attached as Annexure I.

2. The Chairman welcomed the participants and informed that the present Meeting is the last Meeting of the Committee because its term is expiring on 23rd May, 1985 and due for reconstitution. He took the opportunity of expressing his appreciation and gratitude to the Members of the Central Sub Committee on Crop Standards, Notification and Release of Varieties for helping him to discharge the functions of the Sub Committee in an effective way and for the honour and privilege of serving as Chairman.

3. He further mentioned that the role of the Committee is very important especially keeping in view that the primary duty of the Committee is to allow only those varieties which are distincty superior to varieties already notified so that crop productivity per unit area is increased. To achieve this goal, Chairman has always been guided by the Members of the Committee and decisions taken by the Committee reflect the views of the Members and not of any individual.

4. He also mentioned that the World Bank has submitted a Study Report to the Ministry of Agriculture wherein it has been pointed out that large number of varieties are being liberally released and notified and thus there is a need to enforce a strict discipline in the system of release and notification. The World Bank further indicated that the entire breeding programme needs purposeful direction so that the present system could be streamlined and inferior varieties and not released/notified. Various private entreprenuers in the Seed Industry have also pointed out the present difficulties faced by them in getting clearance from Quarantine and in the matter of export of the surplus seeds. He was of the opinion that private seed companies should be encouraged so that they can serve farmers in a better way.

5. He also mentioned the Press Report which recently appeared in a leading newspaper about the non-release of certain huskless varieties of Barley and described the same as unfortunate. He said that recommendations on release by the Committee are made not by the Chairman but by the Committee. The unanimous view of the Committee as a whole is reflected in the proceedings. The Members of the Committee were of the opinion that such type of Press reports are not only unfortunate but vitiate the well-established procedures and conventions followed in the matter of evolution and evaluation of the varieties. The Members further mentioned that the varieties in question have not been rejected and breeder concerned was requested to submit the additional data so that the varieties are properly evaluated.

6. The Chairman further mentioned that timely submission of the proposals and their circulation to the members to go through the proposals, is very important to correctly evaluate the proposals. Unfortunately, it has been observed that some authorities submit the proposals at the eleventh hour and it causes unnecessary difficulty to the Committee and embarrassment to the Secretariat. He pointed out that the Secretariat of the Committee informed all concerned on 7th March, 1986 to submit the proposal positively by 15th April, 1986 so that they could be included in the Agenda Notes and sent to the Members. It has been seen that large number of proposals have been received after the despatch of Agenda Notes and now it is very difficult to consider those proposals. The Members were of the opinion that proposals received after the despatch of the Agenda Note should not be included and it should be made known to all sponsoring authorities that the proposals are sent in time. Chairman suggested that the proposals received after the despatch of the agenda notes might be considered in the next Meeting which should be convened at the earliest.

7. The following decisions were taken to improve the present release and notification system:

(i) the present system of release and notification should be evaluated critically so that only good varieties are allowed to reach to the public;

(ii) there should be a strict monitoring of the various stages of seed production namely breeder, foundation and certified. It has been observed that the monitoring is badly lacking and some time foundation seeds of important oilseed crops are diverted for oil extraction which is a criminal wastage of the efforts made in the breeding of the varieties, their release and breeder/foundation seed production;

(iii) the study made by the Secretariat of the Central Seed Committee about the present position of the release and notification of the varieties should be circulated to all concerned and might also be put up as an Agenda Item in the next Meeting for discussion by the Members;

(iv) the Secretariat of the Committee should prepare a paper containing various aspects and implications on re-introduction of the system of denotification of the varieties which are no longer useful or have not been accepted by the farmers and views of the concerned segments of the Seed Industry might be obtained;

(v) the next Meeting of the Committee might be convened at the earliest so that the proposals received late could be considered and delay in their release and notification is avoided.

After this, the regular agenda was taken up for discussion and the position in respect of each item is indicated below:

Item No. 1: Confirmation of the minutes of the Fifth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 28th January, 1986.

8. The minutes of the earlier Meeting were confirmed.

Item No. 2: Review of action taken on minutes of the Fifth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

9. The position indicated in the agenda notes was noted by the Sub-Committee/participants.

Item No. 3: Consideration of the proposals for Release.

10. 8 proposals of various varieties of different crops were evaluated for release and notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated as under:

I. Detail of the varieties recommended for Release and Notification. The varieties were recommended for notification for the entire country and area of cultivation is indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Groundnut	ICGS-11	Recommended for release for cultivation in the following Zones for Rabi/Summer seasons.
		Zone III	Parts of Madhya Pradesh and Maharashtra
		Zone V	Andhra Pradesh, Karnataka and parts of Maharashtra.
2.	Sorghum	CSH-10	Recommended for release for cultivation in Karnataka State only.
3.	Sorghum	CSH-11	Recommended for release for cultivation in all the Kharif sorghum growing tracts.
4.	Sorghum	CSH-12R	Recommended for release for cultivation in Rabi sorghum areas of Karnataka, Maharashtra and Andhra Pradesh.
5.	Wheat	VL Gehun-616	Recommended for release for cultivation in early sown rainfed areas of Northern Hills zone comprising the hills of U.P., H.P., and Jammu & Kashmir.

11. The details of the important features of the above varieties is given as Annexure II.

II. Detail of the varieties which have not been recommended for Release

Sl. No.	Crop	Variety	Remarks
1.	Arhar	Sagar (H-77-208)	The variety is not found superior to T-21 and UPAS-120.
2.	Raya	RLM-514	The variety performance is found superior only in Punjab State and Punjab State Seed Sub-Committee has already released the variety for Punjab. The performances of the variety in other States for which it has been proposed to be released is not found superior in comparison to existing varieties and thus not recommended for release in these States.
3.	Wheat	Triveni (K-8020)	The sponsoring authority is advised to submit the detail of agronomic and adaptive trials through Project Director (Wheat). After receipt of the above information the variety might be considered for release and notification.

Item No. 4: Consideration of the proposals for notification under Section 5 of the Seeds Act.

12. 84 proposals of different varieties of various crops were evaluated for notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in each proposal is indicated as under:—

13. Details of the varieties recommended for notification for entire country

Sl. No.	Crop	Variety
1	2	3
1.	Arhar (Red gram)	Maruti (ICP-8863)
2.	Brinjal	Arka Shirish
3.	Brinjal	Arka Kusumakar
4.	Brinjal	Arka Sheel
5.	Brinjal	Arka Navneet
6.	Bitter gourd	Arka Harit
7.	Bottle gourd	Arka Bahar
8.	Bush Squash	Patty Pan
9.	Bajra	Co. 7
10.	Capsicum	Arka Basant
11.	Capsicum	Arka Gaurav
12.	Capsicum	Arka Mohini
13.	Chilli	X-235
14.	Horse-gram (Kulthi)	Dapoli-1
15.	Long melon	Arka Sheetal
16.	Muskmelon	Arka Rajhans
17.	Muskmelon	Arka Jeet
18.	Paddy	Ratnagiri 68-1
19.	Paddy	Ratnagiri-73
20.	Paddy	Pathara (IET-6639)
21.	Paddy	Gauri (IET-7428)
22.	Paddy	Seshu (IET 2881)
23.	Paddy	Srinivas (IET 2508)
24.	Paddy	Vikramarya (IET 7302)
25.	Paddy	Sonasali (IET 7575)
26.	Paddy	Prasanna (IET 7564)
27.	Paddy	ASD. 16
28.	Paddy	Mahaveera (IET 7791)
29.	Paddy	Karna (IET 7209)
30.	Prosomillet (Paniveragu)	Co. 3
31.	Ragi	KBR-1 (HR-911)
32	Round melon	Arka Tinda
33.	Sorghum	SPH-201
34.	Sorghum	SPV. 462 (The variety has been tested as SPV-462 in All India Coordinated Sorghum Improved Project trials and thus the same would be retained to avoid confusion)
35.	Snake gourd	Co. 2
36.	Watermelon	Arka Jyoti (Hybrid)

14. Details of the important features of the above varieties is given in Annexure III.

II. Detail of the varieties which are not recommended for notification and sponsoring authorities have been advised to re-submit the proposals alongwith additional information as indicated against each variety

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Bengal gram	Co. 3	(i) Detail of the pedigree and source of germ plasm might be indicated. (ii) Views of the Project Coordinator along with data of coordinated trials might be submitted.
2.	Bengal gram	Bheema (2375)	(i) Views of the Project Coordinator along with data of coordinated trails might be submitted.
3.	Beans	Watex	—Do.—
4.	Cucumber	Sheetal	—Do.—

1	2	3	4
5.	Cauliflower	Kibogiant	(i) Views of the Project Coordinator along with data of coordinated trials might be submitted. (ii) The seed yield of the variety has been reported 15-20 tonnes per acre and plant is reported to be having 10-13 branches, this needs clarification.
6.	Cowpea	Co. 5	(i) Views of the Project Coordinator along with data of coordinated trials might be submitted.
7.	French bean	Arka Komal	(i) Detail of the pedigree might be indicated. (ii) Views of the Project Coordinator along with data of coordinated trials might be submitted.
8.	Groundnut	Dh. 8	(i) Views of the Project Coordinator along with data of coordinated trials might be submitted.
9.	Groundnut	VRI-1	—Do.—
10.	Green gram	Jawahar Mung-131	(i) How does it differ from ML-131 may please be clarified.
11.	Horse gram	MAN	(i) Detail of the pedigree and source of germ plasm might be indicated. (ii) Views of the Project Coordinator along with data of coordinated trials might be submitted.
12.	Maize	Renuka (G-25 Composite)	(i) Correct release status might be indicated.
13.	Onion	Arka Pragati	(i) Views of the Project Coordinator along with data of coordinated trails might be submitted.
14.	Onion	Arka Niketan	—Do.—
15.	Onion	Arka Kalyan	—Do.—
16.	Pumpkin	Arka Chandan	—Do.—
17.	Pumpkin	Arka Suryamukhi	—Do.—
18.	Paddy	Ratnagiri-2	—Do.—
19.	Paddy	Ratnagiri-1	—Do.—
20.	Paddy	Ratnagiri-711	—Do.—
21.	Paddy	Karjat-1	Do.
22.	Paddy	T-141	(i) Very less quantity of breeder seed is reported to be available with originating institute which shows that varieties are not popular and seed is not in demand. The actual position may please be clarified.
23.	Paddy	T-90	
24.	Paddy	T-1242	
25.	Paddy	BAM-6	
26.	Paddy	FR-438	
27.	Paddy	S.R. 26B	
28.	Paddy	Rambha (IET 7975)	(i) Views of the Project Coordinator along with data of coordinated trials might be submitted.
29.	Paddy	Improved white ponni	—Do.—
30.	Ragi	Indaf-8	—Do.—
31.	Radish	Arka Nishant	(i) Detail of the Pedigree might be indicated.
32.	Forage sorghum	Co. 27	(i) Views of the Project Coordinator along with data of coordinated trials might be submitted.
33.	Sunflower	Co. 2	(i) Detail of the Pedigree might be indicated.
34.	Sesamum	KDSC-1 (E-8)	—Do.—
35.	Tomato	ATH-1	(i) Views of the Project Coordinator along with data of coordinated trials might be submitted.
36.	Tomato	ATV-1	—Do.—
37.	Tomato	Arka Vikas	—Do.—
38.	Tomato	Arka Saurabh	—Do.—
39.	Watermelon	Arka Manik	—Do.—
40.	Mustard	Rohini (KRV-24)	(i) It may be clarified that how does it differ from Varuna especially with regard to morphological characters. The identifiable characters might be indicated so that certification agencies could identify the variety in the field.

15. Committee authorised the Chairman to decide the notification of the above varieties after receipt of the desired information.

III. Detail of the varieties which could not be recommended for notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra	GHB-30	The female parent i.e. MS 5054A has been reported susceptible to downy mildew disease. Latest report from Gujarat indicates that MS 5054A has been found heavily infected by downy mildew disease. Keeping in view the same the Committee did not agree for its notification.
2.	Groundnut	ICGS-11	The release proposal was also received and Committee recommended its release and notification as indicated at Sl. No. 1 of Item No. 3. Thus the proposal was not separately considered for notification.
3.	Paddy	Karjat-184	The variety has been reported susceptible to blast and bacterial blight diseases and susceptible stem borer gall midge pests.
4.	Paddy	Karjat 14-7	The variety is reported susceptible to bacterial blight and stem borer.
5.	Paddy	Ratnagiri-24	The variety is reported susceptible to false smut, and bacterial blight disease and susceptible to stem borer, BPH, gall midge, infestation.
6.	Peas	Glorasia	There is no originating breeder/institute which can maintain the breeder seed. Pedigree of the variety is also not known.
7.	Sorghum	DSH-1	The All India Coordinated Sorghum Improvement Project has already submitted the proposal of the same variety for release and notification as CSH-10 and Committee has already approved the same (Sl. No. 2 of Item No. 3).
8.	Sorghum	KDRSH-1	The All India Coordinated Sorghum Improvement Project has already submitted the proposal of same variety CSH-12R for release and notification. Committee has approved the same as Sl. No. 4 of Item No. 3.

16. The Meeting ended with a Vote of Thanks to the Chair.

ANNEXURE I

List of the participants who have attended the 6th Meeting of the Central Sub-Committee on Crop Standards, Notification & Release of Varieties held on 16th May, 1986 under the Chairmanship of Dy. Director-General (CS), ICAR in Krishi Bhavan, New Delhi

1. **Dr. M.V. Rao,** *Chairman*
   DDG (CS).
2. **Shri T.V. Sampath,**
   Agril. Commissioner.
3. **Shri I.S. Bisht,**
   Dy. Secretary(Seeds).
4. **Shri P. Manickavasagam,**
   Director, Seed Certification,
   Tamil Nadu.
5. **Shri J.N. Johri,**
   Director, Rajasthan State Seed
   Certification Agency,
   Jaipur.
6. **Shri Hari Krishna**
   Director, U.P. State Seed Certification Agency,
   Lucknow.
7. **Shri B.S. Gill,**
   Director,
   Punjab State Seed Certification Agency,
   Chandigarh
8. **Shri B.R. Barwale,**
   Mahyco, Bombay.
9. **Shri H.S. Das,**
   Director,
   Orissa State Seed Certification Agency,
   Bhubaneshwar.
10. **Shri H. Narasima Murthy,**
    Director,
    Karnataka State Seed Certification
    Agency, Bangalore.
11. **Dr. D.N. Ram,**
    Director Agriculture, Bihar, Patna.
12. **Dr. Munshi Singh,**
    Head, Genetics, IARI, New Delhi.
13. **Dr. J.P. Tandon,**
    Project Director (Wheat),
    (Also Rep. Dirctor, IARI)
14. **Shri B.N. Sehgal,**
    Jt. Director Agri/CSCO,
    Delhi Administration
15. **Dr. S.S. Dindagi,**
    Project Director (Oil seeds),
    Hyderabad
16. **Shri K. Phool Singh,**
    Director,
    Haryana State Seed Certification Agency,
    Chandigarh.

Others

17. **Shri Mushtaq Ali Butt,**
    Dy. Director. Agriculture Central,
    Kashmir.
18. **Shri V. Subramaniam,**
    Joint Director Agriculture,
    Madras-5
19. **Shri M.N. Narang,**
    Jt. Director,Agriculture I /c H.P. State
    Seed Certification Agency,
    Shimla (H.P.)
20. **Shri B.S. Verma,**
    Chief of Seed Certification Officer,
    Haryana, Chandigarh.
21. **Shri S.S. Sharma,**
    Dy. Director of Agriculture, Haryana,
    Chandigarh.
22. **Dr.Shankar Rao,**
    Chief Quality Control,
    National Seeds Corporation Limited,
    Beej Bhavan, Pusa Complex,
    New Delhi-110 012
23. **Shri V.V.S. Murthy,**
    Senior Rice Breeder,
    Directorate Rice Research, Hyderabad.
24. **Shri P.I. Anjaria,**
    Jt. Director Agriculture,
    Gujarat, Ahmedabad.
25. **Shri P.S. Koperkar,**
    Dy. Chief Seeds Officer, Pune.
26. **Shri Gurdip Singh Josan,**
    Jt . Director of Agriculture (HYVP),
    Punjab, Chandigarh.
27. **Dy. R.K.S. Chavan,**
    Addl. Director of Agriculture,
    U.P. Lucknow.
28. **Shri N.S. Tanwar,**
    Officer on Special Duty (QC&T),
    Ministry of Agriculture & Rural
    Development,
    Department of Agriculture & Cooperation,
    F/118, Shastri Bhavan, New Delhi.
29. **Shri M.S. Shukla,**
    Dy. Seed Officer,
    Ministry of Agriculture & Rural
    Development,
    Deptt. of Agril. & Coopn.,
    F/218, Shastri Bhavan, New Delhi.

ANNEXURE II

The important Features of the Varieties recommended for release by the Central Sub-Committee on Crop Standards, Notification and Release of Varities in its Sixth Meeting held on 16th May, 1986

1. Name of the Crop : Groundnut
Name of the variety : ICGS-11
Sponsored by : ICRISAT
Parentage with details of its pedigree : Robut 33-1-18-8-B1 Selection from the natural hybrid population of Robut 33-1.

Description of the variety :

(i) Growth habit : Spanish bunch
(ii) Flowering habit : Sequential flowering
(iii) Pigmentation on plant : Green pigmentation
(iv) No. of primary & secondary branches : More
(v) Leaf colour : Dark green
(vi) Leaf shape : Obovate to lanceolate
(vii) Flower colour : Yellow
(viii) *Pod & seed character :*
(a) Pod type : Large Spanish type pods
(b) Pod length : 28 mm
(c) Pod width : 14 mm
(d) Seeds per pod : 2-0-0
(e) Seed length : 15 mm
(f) Seed width : 10 mm
(g) Pod beak : absent
(h) Pod constriction : Slight to moderate
(i) Pod reticulation : Smooth to slight
(j) Seed weight : 60 g/100 seed
(k) Shelling percentage : 70%
(l) Seed colour : Tan
(ix) *Reaction to pest & disease :*
(i) Rust and late leaf spot : Susceptible
(ii) Major groundnut pests : Not known
(iii) Reaction to bud Necrosis disease : Less susceptible to bud necrosis disease compared to Kadiri 3, JL 24 and TMV-2.

Agency responsible for maintaining breeders stock : ICRISAT, Patancheru P.O., 502 324 (AP)

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2. Name of the Crop : Sorghum
Name of the variety : CSH-12R
Sponsored by : All India Coordinated Sorghum Improvement Project (AICSIP).
Parentage with details of its pedigree : The parents of the hybrid are 296A (female) and M 148-138 (male).

A. *Description of the hybrid :*

(a) Plant height : 200-250 cm.
(b) Distinguishing morphological characters:
(i) Plant pigment : Purple
(ii) Leaf : Medium & drooping
(iii) Stem : Medium thick & fully enclosed in leaf-sheath.
(iv) Earhead : Semi-compact & conical shape
(v) Glume : Straw/Red
(vi) Seed : Medium size & Creamy white
(c) Maturity : 115-120 days
(d) Reaction to major diseases : More tolerant to charcoal rot than existing cultivars.

B. *Description of parents :*

		296A (female)	*M* 148-138 (*male*)
(a) Plant height (cm)	:	120-130	150-180

(b) Distinguishing morphological characters:		296 A (*femae*)	M-148-138(*male*)
(i) Plant pigment	:	Tan	Purple
(ii) Leaf	:	Drooping with yellowish green midrib	Drooping with white midrib
(iii) Stem	:	Thick, fully enclosed in leaf-sheath	Medium, fully enclosed in leaf sheath
(iv) Earhead	:	Elongated, Semicompact (apex flat and compact) with boot leaf touching panicle base	Semi Compact
(v) Glume	:	Straw coloured with awns	Straw/red
(vi) Seed	:	Round, pearly & cream coloured	Round, pearly & cream coloured
(c) Days to 50% flowering	:	70-80	70-80
(d) Reaction to major diseases	:	Resistant to all major diseases except downy mildew.	Moderately resistant to major diseases.
(e) Reaction to major pests	:	Susceptible	Susceptible

Agency responsible for maintaining breeder's stock : AICSIP, Dharwad and Hyderabad.

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3. Name of the Crop : Sorghum

Name of the variety : CSH-10

Sponsored by : All India Coordinated sorghum Improvement Project (AICSIP).

Parentage with details of its pedigree : The parents of the hybrid are 296A (female) and SB-1085 (male).

A. *Description of hybrid :*

(a) Plant height : 200-250 cm.

(b) Distinguishing morphological characters:

(i) Plant pigment : Tan

(ii) Leaf : Medium sized & drooping

(iii) Stem : Medium thick & fully enclosed in leaf-sheath.

(iv) Earhead : Semi-compact and oval shaped with short peduncle.

(v) Glume : Short and straw coloured.

(vi) Seed : Medium sized, round and light cream coloured.

(c) Maturity : 100-115 days.

(d) Reaction to major diseases : Resistant to leaf spot diseases & Charcoal rot. Moderately resistant to downy mildew and grain molds.

(e) Reaction to major pests : The incidence of shootfly and stem border is moderate.

B. *Description of the Parents :*

		296*A* (*Female*)	*SB*-1085 (*Male*)
(a) Plant height (cm)	:	120-130	170-190
(b) Distinguishing morphological characters :			
(i) Plant pigment	:	Tan	Tan
(ii) Leaf	:	Drooping with yellowish green midrib	Drooping with yellowish green midrib
(iii) Stem	:	Thick, fully enclosed in leaf sheath	Thin, fully enclosed in leaf sheath.
(iv) Earhead	:	Elongated, semicompact (apex flat and compact) with bootleaf touching panicle base.	Semi-compact
(v) Glume	:	Straw coloured with awns	Straw coloured
(vi) Seed	:	Round, Pearly & cream coloured	Round, pearly & cream coloured
(c) Days to 50% flowering :			
Kharif	:	70-80	70-80
Rabi	:	70-87	66-85

Agency responsible for maintaining breeder's stock : AICSIP, Dharwad and Hyderabad.

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4. Name of the crop : Sorghum

Name of the variety : CSH-11

Sponsored by : All India Coordinated Sorghum Improvement Project (AICSIP), Rajendranagar, Hyderabad-500 030 (AP).

Parentage with details of its pedigree : SPH-221 was developed by using the ICRISAT restorer line MR 750 (MR 841, with the pedigree (SC 108-3 × CS 3541-27) as pollinator parent on 296A (released by AICSIP).

A. *Description of the hybrid*

(a) Plant height	160 to 190 cm
(b) Distinguishing morphological characters	
(i) Leaf	Medium size, tan pigmented and dull green midrib.
(ii) Stem	Medium thick, moderately juicy, internodes fully enclosed in leaf sheath.
(iii) Earhead	Semi-open and well exerted with elongated peduncle (about 10 cm).
(iv) Glumes	Short and dark straw colour, free threshing, awnless.
(v) Seed	Medium size, oval shaped, thin pericarp, light creamy colour, corneous endosperm.
(c) Maturity	105-115 days
(d) Reaction to major diseases	Moderately resistant to downy mildew : comparable to commercial check hybrids CSH 5 and CSH 9 under inoculated conditions. For other leaf diseases : moderately resistant to anthracnose.
(e) Reaction to major pests	(i) SPH 221 has semi-open panicles which are less hospitable to head worms and bugs. (ii) Comparable to marginally better than commercial checks CSH-5 and CSH-9 for shoot fly and stem borer reaction.

B. Description of male and female parents of SPH-221 :	*Female 296A*	*Male MR 750*
(a) Plant height (cm)	120-130 cm	130-150 cm.
(b) Distinguishing morphological characters :		
(i) Plant pigment	Tan	Tan
(ii) Leaf	Drooping, boot leaf short, pointing upward at the time of ear emergence but drooping later on	Horizontal, wavy margin medium size.
(iii) Stem	Thick, enclosed in leaf sheath	Thin, mostly enclosed in leaf sheath
(iv) Earhead shape	Elongated, semicompact apex rectangular and compact, boot leaf touches the panicle base, peduncle short and medium thick, stigma well protruded.	Semi-open to lax, elongated, oval shape, well exserted (10-15 cm).
(v) Pedicelled spikelets	Vestigial	Occasionally produce pollen
(vi) Glume	Straw coloured with awns.	Medium size with a light pink wash awnless.
(vii) Grain colour	Pearly and cream coloured	Medium size, thin pericarp, white/creamy colour.
(viii) Grain shape	Spherical	Oval, slightly asymmetrical and flat on one side.
(c) Maturity	(i) Days to 50% flowering :	
	Kharif : 65-80 days	68-80 days
	Rabi : 66-80 days	62-74 days
	(ii) Days to harvest :	
	Karif : 105-120 days	108-120 days
	Rabi : 106-130 days	105-120 days
Agency responsible for maintaining breeder's stock	ICRISAT, Patancheru P.O., 502 324 (AP).	

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5. Name of the Crop	Wheat
Name of the variety	VL Gehun 616
Sponsored by	Director, Vivekananda Parvatiya Krishi Anusandhan Shala, Almora, (UP).
Parentage with details of its pedigree	VL 616 was developed through pedigree method of selection from a cross between Sonalika × CPAN 1507 attempted in 1974.
Description of variety	
(a) Plant height	95 to 100 cm height comparable to Sonalika and VL 401.
(b) Distinguishing morphological characters :	(i) Spreading growth habit in early stage with dark green foliage and profuse tillering. (ii) Spikes are awned, large with dark brown glumes at maturity. (iii) Grains are amber, hard and medium bold in size. (iv) Threshability is medium. (v) Long peduncle like Sonalika.
(c) Maturity range	VL 616 is a thermo-sensitive variety which does not flower before the winter months (December to February) are over even if it is seeded in the end of September or in the beginning of October. Hence, it takes 165 to 170 days to flower and 215 to 220 days to mature when seeded extremely early.
Agency responsible for maintaining breeder's stock	Vivekananda Parvatiya Krishi Anusandhan Shala, Almora-263 601 (UP)

ANNEXURE III

Important features of the varieties Recommended for Notification in the 6th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop : Arhar
Variety : Maruti (ICP-8863)
Year of Release : 1985
Parentage : Selection from 15-3-3 of Maharashtra.
Institute responsible for maintaining breeder's stock : Senior Scientist (Pulses) ARS/Gulbarga.
Description of the variety : Plant height 126 cms, No. of branches/plant 8-10, Reddish brown seeds with 8.5/100 seeds weight.
Two identifiable and distinguishable morphological characteristics of the variety : (1) Seeds - reddish brown.
(2) Late in flowering by 15 days compared to CS-1.

Yield :

(a) Commercial product : —
(b) Seed : 15 Q/ha.

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2. Crop : Brinjal
Variety : Arka Shirish
Year of Release : 1984
Parentage : IIHR No. 194-1 Collected from Karnataka developed as a improved variety by pure line breeding method.
Institute responsible for maintaining the breeder's seed stock : IIHR, Bangalore - CHES, Godhra.
Description of the variety
Plant height : 150 cm.
Stem & foliage distinct features : Green stem with green foliage extra long fruits green skin, solitary bearing habit, green calyx.
Distinct fruit : Extra long fruits, green skin, solitary bearing habit, green calyx.
Seed to seed duration : 140-150 days.
1000 seed weight : 3.5 g.
Two identifiable and distinguishable characteristics of the variety : Tall plants, green leaves, white flowers, extra long, green fruits, solitary bearing habit.

Yield :

(a) Commercial product : 389.38 q/ha in 110-115 days after transplanting.
(b) Seed : 90-100 Kg/ha.

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3. Crop : Brinjal
Variety : Arka Kusumakar
Year of Release : 1984
Parentage : Collected as IIHR No. 193 from Karnataka, developed as a improved variety by pure line breeding method.
Institute responsible for maintaining the breeder's seed stock : IIHR, Bangalore - CHES, Godhar.

Description of the variety :

(i) Plant height : 100 cm.
(ii) Stem and foliage distinct features : Green stem with green foliage.
(iii) Distinct fruit : Short green fruits in clusters.
(iv) Seed to seed duration : 130-150 days
(v) 1000 seed weight : 3.0 g.
Two identifiable and distinguishable morphological characteristics of the variety : Medium plants bearing white flowers green fruits in cluster, soft texture good flavour, yielding 404 q/ha in 110-120 days after transplanting.

Yield :

Commercial product : 404 q/ha.
Seed : 150 kg/ha.

4. **Crop** : **Brinjal**
Variety : **Arka Sheel**
Year of Release : 1984
Parentage : Originally a collection IIHR 192 from Kodaga, Karnataka, Developed as an improved variety by pure line breeding method.
Institute responsible for maintaining the breeder's seed stock : IIHR, Bangalore - CHES, Godhra.

Description of the variety

(i) Plant height : 150 cm.
(ii) Stem and foliage distinct features : Green stem with purple tinge towards the tips. Green foliage with purple tinge at the base when young.
(iii) Distinct fruit/habit root characters : Medium long fruit with deep purple shining skin and green calyx.
(iv) Seed to seed duration (days) : 150-160 days
(v) 1000 seed wt. : 3.5 g.
Two identifiable and distinguishable characteristics (morphological) of the variety : Tall plants with green leaves and purple tinge at the base when young fruit medium size of deep shining purple skin, green calyx, solitary bearing habit

Yield:
Commercial product : 376 q/ha.
Seed : 1 q/ha.

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5. Crop : Brinjal
Variety : Arka Navneet
Year of Release : 1984
Parentage : Female Parent : IIHR 22-1
Male Parent : Supreme
Institute responsible for maintaining the breeder's seed stock : IIHR, Bangalore — CHES, Godhra.

Description of the parents and variety

	Male Parent	*Female Parent*	*A. Navneet*
(i) Plant height	90-100 cm	100-120 cm	100-150 cm
(ii) Stem & foliage distinct features	Green angular leaves	Green angular leaves	Green angular leaves
(iii) Distinct fruit characters	Large pear shaped fruits of deep purple skin, green calyx	Oval shaped fruit of deep purple shining skin, green calyx	Large oval fruits with deep purple shining skin, green calyx
(iv) Seed to seed duration	150-160 days	150-160 days	150-160 days
(v) 1000 seed weight	4.5 g	5.0 g	5.5 g.

Two identifiable and distinguishable morphological characteristics of the hybrid : Tall plant (150 cm) with medium lobed leaves, bearing solitary fruits of oval shape, deep purple fruits each weighing 450 g. at marketable stage.

Yield:
Commercial product : 633 q/ha.
Seed : 75 kg hybrid seed/hectare.

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6. Crop : Bitter gourd
Variety : Arka Harit
Year of Release : 1984
Parentage : IHR-4, collection from Rajasthan developed as an improved variety by pure line breeding method.
Institute responsible for maintaining the breeder's seed stock : I.H.R, Bangalore.

Description of the variety :

(i) Plant height/Vine length (cm) : 200 cm.
(ii) Stem and foliage distinct features : Thin stem with light green, deeply lobed foliage.
(iii) Distinct fruit : Spindle shaped, glossy green fruits without tubercles.
(iv) Distinct seed characters : Medium large seeds with brown seed coat and self coloured somewhat circular pattern.
(v) Seed to seed duration (days) : 100-110 days.
(vi) 1000 seed weight : 204 g.
Two identifiable and distinguishable morphological characteristics of the variety : Spindle shaped small fruits with smooth, thick skin of glossy green colour. Fruits ready for harvest 14-15 days after flower opening.

Yield:
Commercial product : 123 quintals/hectare.
Seed : 3 quintals/hectare.

7. Crop : Bottle gourd

Variety : Arka Bahar

Year of Release : 1984

Parentage : IHR-20A collection from Karnataka developed as an improved variety by pure line breeding method.

Institute responsible for maintaining the breeder's seed stock : IIHR, Bangalore - CHES - Godhra.

Description of the variety :

(i) Plant height/vine length : 350-400 cm

(ii) Stem and foliage distinct features : Vigorous vines, dark green foliage, soft leaf surface.

(iii) Distinct fruit : Straight, medium long fruits without crock neck. Light green shining fruit skin when tender.

Distinct seed character : Light brown seed coat with brown lining along the margin.

Seed to seed duration : 120 days

1000 seed weight : 150 g.

Two identifiable and distinguishable morphological characteristics of the variety : Medium long fruits (length 48 cm. girth 26 cm) of lush green shining skin each weighing 1 kg at marketable stage, devoid of crock neck.

Yield:

Commercial product : 400-450 q/ha.

Seed : 3 q/ha.

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8. Crop : Bush Squash (*Cucurbita pepo*)

Variety : Patty Pan

Year of Release : 1984

Parentage : An Introduction from the U.S.A.

Institute responsible for maintaining the breeder's seed stock : Indian Institute of Horticultural Research, Bangalore - 560 080.

Description of the variety :

(i) Plant height : 60-100 cm.

(ii) Stem and foliage distinct features : Erect stem with short internodes, leaves with shallow lobes, hirsute.

(iii) Distinct fruit characters : White, disc shaped fruits with notches along the margin.

(iv) Distinct seed characters : Medium size seeds with off white seed coat.

(v) Seed to seed duration : 75-80 days

(vi) 100 seed weight : 78 g.

Two identifiable and distinguishable morphological characteristics of the variety : White coloured, disc shaped fruits with notches around the margin, each weighing 350-400 g., deeply lobed leaves without any pattern. Monoecious plants.

Yield:

Commercial product : 400-700 q/ha.

Seed : 1.5 q/ha.

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9. Crop : Bajra (*Cumbu*)

Variety : Co. 7

Year of Release : 1986

Parentage : Composite developed by unit selection from the cross derivatives of (Co. 6 × BK 560) × PT 1921.

Institute responsible for maintaining the breeder's seed stock : School of Genetics, TNAU, Coimbatore - 3.

Description of the variety:

Plant height : 130-145 cm.

Number of tillers : 6-10

Earhead length : 22-26 cm.

Earhead shape : Mostly spindle with occasional conical and cylindrical

Hairiness : Glabrous

Nodal colour : Green, occasional pink

Pigmentation : Green

Grain colour : Slate colour

1000 grain weight : 6.8 to 7.2 gram.

Two identifiable and distinguishable morphological characteristics of the variety : High protein content of grain (12.9%) high tillering, high yielding.

Yield:

Commercial product : 3500-4500 kg/ha.

Seed : 3000 - 3500 kg/ha.

10. Crop : Capsicum
Variety : Arka Basant
Year of Release : 1984
Parentage : IHR 225-1-1 (Original variety Soroksar followed by mass selection.
Institute responsible for maintaining the breeder's seed stock : CGES, Ranchi & IIHR, Bangalore

Description of the variety:

(i) Plant height (cm) : 50 cm
(ii) Stem and foliage distinct features : Indeterminate growth habit with yellowish green foliage, 2-3 lobed conical fruits which are erect, cream coloured when mature unripe and turning to orange red on ripening. Average fruit weight 50-80 g, Maximum fruit weight 120 g.
Distinct fruit characters : 2-3 lobed conical fruits which are erect. Cream coloured when mature unripe and turning to orange red on ripening.
Average fruit weight : 50-80 g.
Maximum fruit weight : 120 g.
Flesh thickness : 0.3 - 0.4 cm.
Fruit size : 7.9 cm length, 4.5 cm width.
Seed to seed duration : 220 days
1000 seed weight : 4.4 gm.
Two identifiable and distinguishable morphological characteristics of the variety : Erect fruiting habit. Fruits are cream yellow when mature unripe, turning orange red on ripening.

Yieldt

Commercial product : 15 tonnes/ha.
Seed : 140 kg/ha.

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11. Crop : Capsicum
Variety : Arka Gaurav
Year of release : 1984
Parentage : IHR 214-1 (Golden Calwender) followed by mass selection.
Institute responsible for maintaining the breeder's seed stock. : CHES, Ranchi & IIHR, Bangalore.

Description of the variety:

(i) Plant height : 50 cm
(ii) Stem and foliage distinct features : Indeterminate plant habit with green foliage.
(iii) Distinct fruit characters : 3-4 lobed, blocky fruits which are erect, green when mature, green turning to orange yellow on ripening
Average fruit weight : 130-150 gm.
Maximum fruit weight : 2.50 g.
No. of fruits/plant : 6-10 fruits
Flesh thickness : 0.4 cm.
Fruit size : Length : 7-8 cm.
Width : 4-7 cm.
(iv) Seed to seed duration : 210 days
(v) 1000 seed weight : 5.5 g.
Two identifiable and distinguishable morphological characteristics of the variety : 3-4 lobed fruits which are upright green when unripe turning orange yellow

Yield :

Commercial product 18 tonnes/ha.
Seed 150 kg/ha.

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12. Crop : Capsicum
Variety : Arka Mohini
Year of Release : 1984
Parentage : IHR 31-2-1-2 (Original Titan variety followed by mass selection).
Institute responsible for maintaining the breeder's seed stock : CHES, Ranchi and IIHR, Bangalore.

Description of the variety:

(i) Plant height 45 cm.
(ii) Stem and foliage distinct features Determinate plant habit with dark green foliage.

(iii) Distinct fruit characters	3-4 lobed, blocky fruits, which are drooping, dark green when mature, green turning to red on ripening. Average fruit weight : 180-200 gm Maximum fruit weight : 300 g. No. of fruits/plant : 3-5 Flesh thickness : 0.4 to 0.5 cm. Fruit size : Length : 7—8 cm. Width : 6—8 cm.
(iv) Seed to seed duration	200 days
(v) 1000 seed weight	8 gms.
Two identifiable and distinguishable morphological characteristics of the variety	Thick fleshed fruits, dark green, blocky fruits turning red on ripening. Fruit are pendunt, average fruit weight 180-200 g.
Yield :	
Commercial product	20 tonnes/ha.
Seed	150 kg/ha.

13. Crop	Chilli
Variety	X-235
Parentage	G 4 × Yellow anther Mutant
Institute responsible for maintaining the breeder's seed stock	Regional Agricultural Research Station, Lam, Guntur.
Distinguishing morphological characters :	
(i) Plant characters	Plants compact and bushy with short internodes
(ii) Leaf lamina	Narrow and dark green
(iii) Leaf axil (Node)	Green without purple pigmentation. All other varieties will have purple pigmentation.
(iv) Flower	Solitary
(v) Corolla	White
(vi) Anthers	Yellow (Other varieties will have purple or bluish anthers)
(vii) Calyx shape	Cup Shaped
(viii) Calyx attachment	Persistent
Pod character :	
(i) Weight of 100 pods (Green)	182 g.
(ii) Weight of 100 pods (Dry)	60.8 g.
(iii) Length of pod	5.5 to 6.0 cm.
(iv) Girth of pod	2.3 to 2.7 cm.
(v) Percentage of seed of pod	40 to 45%
(vi) Pericarp colour	Unripe : dark green Ripe : bright red
(vii) Seed colour	Yellow
(viii) 1000 seed weight	4.5 gm.
(ix) Pungency	Highly pungent
Maturity :	
(i) Seed to flower	65 days
Seed to seed	170 days

14. Crop	Horse gram (*Kulthi*)
Variety	Dapoli-1
Year of Release	1984
Parentage	Selection from the local bulk of Konkan region
Institute responsible for maintaining the breeder's seed stock	Deptt. of Agricultural Botany, College o Agriculture, Konkan Krishi Vidyapeeth, Dapoli.
Description of the variety	Semi-spreading tendrilar growth habit, grows 45 to 55 cms tall, flowers at about 50 to 55 days, after sowing in late Kharif, matures at about 90 to 100 days in Rabi while 100 to 110 days in late Kharif. Grains colour is ligh brown, medium bold size, with 100 seed weight is 3.13 gram, with 21.08% protein contents. Yields 9 to 10 quintals per hectare. Recommended for general cultivation after harvest of early rice varieties on the residual moisture in Konkan region.
Two identifiable and distinguishable morphological characteristics of the variety	Semi-spreading and red tendrils smooth and dark green foliage.
Yield :	
Commercial product	9 to 10 quintals/hectare.
Seed	7 to 8 quintals/hecatre.

15.	**Crop**	Long Melon
	Variety	Arka Sheetal
	Year of Release	1984
	Parentage	IIHR 3-1-1-1-5-1, a collection from Lucknow, developed as an improved variety by pure line breeding method.
	Institute responsible for maintaining the breeder's seed stock	IIHR, Bangalore - 560 080 & CHES, Godhra.
	Description of the variety :	
	(i) Plant height (cm)	150-200 cm.
	(ii) Stem and foliage distinct features	Angular stem with dark green shallow lobed leaves.
	(iii) Distinct fruit characters	Medium long fruit (length 22 cm. girth 7.8 cm.), light green skin colour, crisp texture, free from bitter principles.
	(iv) Distinct seed characters	Light tan coloured seeds.
	(v) Seed to seed duration	100-110 days
	(vi) 1000 Seed weight (g)	25 gm.
	Two identifiable and distinguishable morphological characteristics of the variety	Monoecious plant with medium long, lush green fruits covered with soft hairs, each weighing 90 to 100 gm at marketable stage.
	Yield :	
	Commercial product	350 q/ha.
	Seed	150 kg/ha.

16.	Crop	Muskmelon
	Variety	Arka Rajhans
	Year of Release	1984
	Parentage	IIHR 107, a collection from Rajasthan developed as an improved variety by pure line breeding method.
	Institute responsible for maintaining the breeder's seed stock	IIHR, Bangalore - 560 080.
	Description of the variety :	
	(i) Plant height (cm)	200 cm.
	(ii) Stem and foliage distinct features	Densely Hirsute stem, light green foliage with shallow lobes.
	(iii) Distinct fruit characters	Fruits medium large, round to slightly oval, creamy white skin, netted with shallow vein tracks at full slip stage. Fruit skin white with green vein tracts when immature. Flesh white with pink seed cavity, crisp texture and mild flavour when ripe. Average fruit weight 1 kg. It gives 2—3 fruits per plant.
	(iv) Distinct seed characters	Light tan coloured seeds
	(v) Seed to seed duration	85-90 days
	(vi) 1000 seed weight	35 gm.
	Two identifiable and distinguishable morphological characteristics of the variety	Round to slightly oval fruits, white skin with light green stripes when immature, netted skin at full slip stage, white flesh, salmon cavity, crisp texture.
	Yield :	
	Commercial product	250 q/ha.
	Seed	150 kg/ha.

17.	Crop	Muskmelon
	Variety	Arka Jeet
	Year of Release	1984
	Parentage	IIHR 103, an improvement over a local collection from Lucknow.
	Institute responsible for maintaining the breeder's seed stock	IIHR, Bangalore - 560 080.
	Description of the variety ;	
	(i) Plant height (vine length)	175-200 cm.
	(ii) Stem and foliage distinct features	Angular stem with dark green lobed leaves.
	(iii) Distinct fruit characters	Fruits small (350 g), round but flat at both the ends. Skin colour dark green at early stage of fruit development which turns golden orange at full slip stage. Flesh white, medium texture excellent flavour. High TSS (13-16%
	(iv) Distinct seed characters	Light tan coloured seeds
	(v) **Seed to seed duration**	90 days
	(vi) 1000 seed weight	30 g.

Two identifiable and distinguishable morphological characteristics of the variety	:	Fruits round but flat at both the ends. Skin colour dark green when immature but turns golden orange at full slip stage. Flesh white and juicy. Fruit weight 350 gm.
Yield :		
Commercial product	:	148.4 q/ha.
Seed	:	120 kg/ha.

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18. Crop	:	Paddy (*Oryza Sativa*)
Variety	:	Ratnagiri 68-1
Year of release	:	1975
Parentage	:	IR-8 × Sigadis
Institute responsible for maintaining the breeder's seed stock	:	Agricultural Research Station, Shirgaon, Distt. Ratnagiri.
Description of the variety	:	Late duration, maturing in 140-145 day coarsed grain, long bold & suitable for low lying areas. Yield - 50 qtls/ha.
Two identifiable and distinguishable morphological characteristics of the variety	:	(i) Plant height 95 cm. Dwarf, erect with dark green leaves, non-lodging, non-shattering, responsive to Nitrogenous fertilizers. (ii) Compact panicle. (iii) Long bold (L.B.) grain type.
Yield :		
Commercial product	:	50-55 q/ha.
Seed	:	40-45 q/ha.

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19. Crop	:	Paddy (*Oryza Sativa*)
Variety	:	Ratnagiri-73
Year of Release	:	1980
Parentage	:	R 23-1 × K 87-2
Institute responsible for maintaining the breeders' seed stock	:	Agricultural Research Station, Shirgaon, Distt. Ratnagiri.
Description of the variety	:	Very early maturing in 95-100 days, dwarf, non-lodging, erect with dark green leaves possessing long bold grain. Plant height is 85-90 cms. Coarse grained, suitable for summer cultivation.
Two identifiable and distinguishable morphological characteristics of the variety	:	(1) Short statured (85 cm ht.). (2) Broad and erect leaves. (3) Long bold grain type. (4) Grain yield is 46.94 q/ha. and translucent white belly absent.
Yield :		
Commercial product	:	40-45 q/ha.
Seed	:	30-35 q/ha.

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20. Crop	:	Paddy
Variety	:	Pathara (IET 6639)
Year of Release	:	1985
Parentage	:	CO 18 × Hema
Institute responsible for maintaining the breeders' seed stock	:	Rice Research Institute, Orissa University of Agril. & Tech., Bhubaneswar, Orissa.
Description of the variety	:	Plant height 80 cms, Grain size length 8.6 mm breadth 3·0 mm L.B. ratio 2.87 Grain class - medium bold, Kharif duration - 95 days, Rabi duration - 105 days.
Two identifiable and distinguishable morphological characteristics of the variety	:	Hull straw coloured and moderately tolerant to drought.
Yield :		
Commercial product	:	
Seed (grains)	:	30 qtls./ha.

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21. Crop	:	Paddy
Variety	:	Gauri (IET-7428)
Year of release	:	1985
Parentage	:	Rajeswari × Vikaram.
Institute responsible for maintaining breeder stock	:	Rice Research Station, Orissa University of Agriculture & Tech., Bhubaneswar Orissa.

Description of the variety	Plant height - 80 cms, short slender grains straw coloured hull on Maturity Moderately tolerant to drought.
Two identifiable and distinguishable morphological characteristics of the variety	Short slender grains, straw coloured hull on maturity—maturity 135 days in Kharif.
Yield :	
Commercial Product	—
Seed (grain)	25 qtls./ha (average)

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22. Crop	Paddy
Variety	Seshu (IET 2881)
Year of release	1985
Parentage	T. 141 × IR 661-34-8-1-3 (IR 24)
Institute responsible for maintaining the breeders' seed stock	Directorate of Rice Research, Rajendranagar, Hyderabad - 500 030 (AP).
Description of the variety	T. 141—It is a traditional variety with tall stature, 150 days duration photo-sensitive with all plant parts green and grains long slender. IR - 24 (IR 661-1-175-3) a hybrid variety developed from the cross IR-8/CP-231/SL 017/Sigadis at International Rice Research Institute (IRRI), Philippines.
Two identifiable and distinguishable morphological characteristics of the variety	Seshu (IET 2881) is a semi-dwarf variety with all plant parts green, leaves shorter, broad acute, grains awnless occasionally develops awntip under certain environments, grains long slender with straw hull colour and white kernel.
Yield :	
(a) Commercial product	Mean yield 4.1 t/ha. in All India Coordinated trials from 1974-1978.

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23. Crop	Paddy
Variety	Srinivas (IET 2508)
Year of Release	1985
Parentage	IR-8 × Latisail
Institute responsible for maintaining the breeders' seed stock	Directorate of Rice Research, Rajendranagar, Hyderabad - 500 030 (AP).
Description of the variety	IR-8 a high yielding variety with semi-dwarf stature and 130 days duration, long bold grains, photo-insensitive developed at the International Rice Research Institute, Manila, Philippines. Latisail—a tall traditional rice variety, photo-sensitive late maturing (150 days) with weak stem, from West Bengal. It has resistance to green leaf hopper and rice tungro virus.
Two identifiable and distinguishable morphological characteristics of the variety	IET 2508 (IR-8 × Latisail) (1) Semi-dwarf variety (90-95 cm) all plant parts green, leaves medium length narrow, erect, grains medium slender with straw husk white kernel, Awnless but may develop awntips under certain environments.
Yield :	
Commercial product	Average over four years in coordinated trials i.e. from 1971-1973.
Seed	5.03 tonnes/hectare.

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24. Crop	Paddy
Variety	Vikramarya (IET 7302)
Year of Release	1986
Parentage	Vikram × Ptb 2 (Ponnaryan) RP 1125-1548-1-4-3
Institute responsible for maintaining the breeders' seed stock	Directorate of Rice Research, Rajendranagar, Hyderabad - 500 030 (AP).
Description of the variety	Vikram—a semi-dwarf hybrid variety (IR-8 × Siam 29) with medium duration of 130 days resistant to gall midge with long bold grain developed at Directorate of Rice Research. Ptb 2 - (Ponnaryan) a sec. selection with 135 days duration long bold grain, resistant to Rice tungro virus and green leaf hopper. It is a variety from Kerala.
Two identifiable and distinguishable morphological characteristics of the variety	Vikramarya (IET 7302) is semi-dwarf with all plant parts green grains long bold. The hull is Yellowish brown with white kernel. The flag leaves are broader and medium long, grain and awnless but may develop awntip under certain environments.
Yield :	
Commercial product	The variety recorded an average yield of 5 t/ha in locations in Andhra Pradesh.

25. **Crop** : Paddy
Variety : Sonasali (IET 7575)
Year of Release : 1985
Parentage : Pedigree - RP 1015-348-85-1 Sona × Manoharsali
Institute responsible for maintaining the breeders' seed stock : Directorate of Rice Research, Rajendranagar, Hyderabad - 500 030 (AP).
Description of the variety : *Sona* - a dwarf high yielding hybrid developed at DRR from the cross T(N) × GEB 24 with 130 days duration, super fine grains blast resistant with semi-dwarf stature susceptible to brown plant hopper.
Manoharsali - a tall photo-sensitive variety with 145 days duration with long slender grains. Susceptible to lodging. It is photo-sensitive with 20 days seed dormancy. It is resistant to blast and brown plant hopper (BPH).
Two identifiable and distinguishable morphological characteristics of the variety : *Sonasali* is a semi-dwarf variety with 130 days total duration with super fine grains & straw hull with white kernel. The variety is photoinsensitive and its duration is prolonged by ten days in regions where low temperatures prevail in the sowing season in *rabi*. However, the yield is not affected. The flag leaves are dark green in colour with medium length and breadth.

Yield :
Commercial product : 'Sonasali' gave an average yield of 3.0 - 3.5 t/ha yield potential in minikit tests in West Godavari range from 4.3 - 8.3 t/ha.

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26. **Crop** : Paddy
Variety : Prasanna (IET 7564)
Year of Release : 1986
Parentage : RP 1667-301-1562 (IET 7564) IRAT 8 × N 22
Institute responsible for maintaining the breeders' seed stock : Directorate of Rice Research, Rajendranagar, Hyderabad - 500 030 (AP).
Description of the variety : IRAT 8 - a tall non-lodging variety with a duration of 125 days with long slender grains, drought resistant and blast resistant, variety from West Africa. It is a hybrid of Moroberikan × 63-105.
N.22—a tall traditional early duration (100 days) variety, with medium slender grains, apiculus pigmented. It is drought resistant and is popular in Uttar Pradesh, as a rainfed unland variety.
Two identifiable and distinguishable morphological characteristics of the variety : Prasanna (IET 7564) is a variety with intermediate stature 100-105 cm with thin culm matures in 90 days under direct seeded and 95 days (when 25 days seedling) planted. Variety has thin long leaves lighter green. It has long slender grains, awnless but occasionally develops awntip under certain environments. The kernel is white and husk straw. All the plant parts are green.

Yield :
Commercial product : The variety recorded mean yields upto 2.5 to 3.5 t/ha under rainfed upland conditions (DRR report 1982) and upto 4.1 t/ha under transplanted conditions (DRR report 1982).

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27. Crop : Paddy
Variety : ASD. 16
Year of Release : 1986
Parentage : ADT-31 × Co. 39
Institute responsible for maintaining the breeders' seed stock : Paddy Experiment Station, Ambasamuduram - 627 401, Tirunelveli district.
Description of the variety :
Plant height (cm) : 93 (88-97)
Habit : Semi dwarf, erect
Anthocyanin pigment : Absent
Internode : Green
Leaf Sheath : Green
Pulvinus : Green
Septum : Cream
Leaf axil : Pale green
Juncture : Colourless
Ligule : White
Auricle : Colourless
Panicle : Long, Compact & Dense
Lemma and palea : Green at emergence
Apiculus : Green
Husk colour : Straw
Rice colour : White

Abdominal white : Present
Grains size (mm)
Length : 7.86
Breadth : 3.02
Thickness : 1.96
L/B ratio : 2.60
1000 grain weight (g) : 24.2

Two identifiable and distinguishable morphological characteristics of the variety : Long flag leaf : long and dense panicle, short bold grain.

Yield :

Commercial product : Grain : 5.6 t/ha.
Straw : 8.0 t/ha.

Seed : 2-2.5 t/ha.

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28. Crop : Paddy
Variety : Mahaveera (IET-7791)
Year of Release : 1985
Parentage : IET-2886 × Annapurna Red
Institute responsible for maintaining the breeders' seed stock : Rice, Breeder, Regional Research Station, V.C. Farm, Mandya.
Description of the variety : Height - 91 cm.
Duration - 110 days
Stem & foliage - Green in colour
Habit - erect
Two identifiable and distinguishable morphological characteristics of the variety : (a) Red rice.
(b) Long medium dull brown grain.

Yield :

Commercial product : Rice 2.8 tonnes/ha.
Seed : Paddy 4.5 tonnes/ha.

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29. Crop : Paddy
Variety : Karna (IET 7209)
Year of Release : 1985
Parentage : Jaya × W-1263
Institute responsible for maintaining the breeders' seed stock. : Regional Research Station, V.C. Farm, Mandya.
Description of the variety : Height - 95 cm., Duration - 135 days, Stem & foliage - Green in colour and Habit - compact.
Two identifiable and distinguishable morphological characteristics of the variety : (a) Erect stem leaf with no senescence even at post-grain maturity.
(b) Compact tillering.
(c) Medium slender grain.

Yield :

Commercial product : Rice 4.2 tons/ha.
Seed : Paddy 6.0 tons/ha.

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30. Crop : Prosomillet (*Panivaragu*)
Variety : Co. 3
Year of Release : 1985
Parentage : Pure line selection from the local collection maintained at TNAU.
Institute responsible for maintaining the breeders' stock : School of Genetics, Tamilnadu Agril. University, Coimbatore-3.
Description of the variety : Plant height - 65-75 cm., Panicle - Loose, open and drooping, Hairiness - Profusely hairy, Grain - Shining golden yellow, Agronomic features - Non-lodging, tolerant to drought. Leaf pubescence - Pubescent.
Two identifiable and distinguishable morphological characteristics of the variety : Shining golden yellow grain drought tolerant, Leaf pubescent.

Yield :

Commercial product : 1282 kg/ha.
Seed : 1000 kg/ha.

31. Crop	Ragi (*Eleusine Coracana Gaertn*)
Variety	KBR-1 (HR-911)
Year of Release	1983
Parentage	UAS-1 × IE 927
Institute responsible for maintaining the breeders' seed stock	Ragi Research Station, University of Agril. Sciences, GKVK, Bangalore-560 065.

Description of the variety

(a)	Plant pigment	Green
(b)	Earhead	Large with broad fingers
(c)	Earlength	8.45 cm
(d)	Finger (No./ear)	8.00
(e)	Tiller (No./plant)	3.49
(f)	Days to 50% flowering	77 days
(g)	Days to maturity	115
(h)	Plant height	83.71 cm.

Two identifiable and distinguishable morphological characteristics of the variety	(1) The plant is green in colour. (2) The ear size is large with broad fingers. (3) The fingers tips are in curve.

Yield :

Commercial product Seed (grain)	3913 kg/ha. Recorded 20.21% moreover Indaf-5 and 12.60% over Indaf-8.
Fodder	8565 kg/ha. Recorded 24.69% more than Indaf-5 and 18.10% over Indaf-8.

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32. Crop	Round Melon
Variety	Arka Tinda
Year of Release	1984
Parentage	Hybridization between parents T3 (from Rajasthan) and T8 (from Punjab) followed by selection in the advanced generation by pedigree method.
Institute responsible for maintaining the breeders' seed stock.	IIHR, Bangalore - 560 080.

Description of the variety :

(i) Plant height (cm)	150-200 cm.
(ii) Stem and foliage distinct features	Angular stem with dark green, deeply lobed hirsute leaves.
(iii) Distinct fruit characters	Round fruit of lush green colour with pubescence when young and tender (60 g).
(iv) Distinct seed characters	Deep olive green seed coat with a groove along the seed coat margin.
(v) Seed to seed duration	110-115 days.
(vi) 100 seed weight (g)	88 g.
Two identifiable and distinguishable morphological characteristics of the variety	Round fruits of lush green shining skin, soft hairs at marketable stage (60 g hairy stem and ovary.

Yield :

Commercial product	96 q/ha.
Seed	2 q/ha.

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33. Crop	Sorghum
Variety	SPH-201
Year of Release	1986
Parentage	296A (female) × PVR-10 (Male)
Institute responsible for maintaining the breeders' seed stock	Sorghum Research Station, M.A.U., Parbhani.
Description of the variety Two identifiable and distinguishable morphological characteristics of the variety	The plant height is 125 to 135 cm, with green pigment & medium, light green leaves. The stems are thick and juicy & large & semi compact earheads. Grains are pearly and solid. It matures in 110 to 115 days. Non lodging, non shattering responsive to fertilizers. Grain yield is 30 to 35 qtls./ha and fodder yield is 40 to 45 qtls./ha.

Yield :

Commercial product	40 to 50 q/ha.
Seed	30 to 35 q/ha.

34. Crop : Sorghum (*Cholam*)

Variety : SPV-462/Co. 26

Year of Release : 1986

Parentage : Hybrid derivative of the cross MS 8271 × IS 3691

Institute responsible for maintaining the breeders' seed stock : School of Genetics, TNAU, Coimbatore.

Description of the variety :

Plant height (cm) : 160-180 cm

Pigment of plant : Tan coloured

Midrib colour : Dull white

Leaf colour : Dark green

Peduncle : Well exposed 5 cm and above from base of the leaf.

Earhead shape : Long and semi compact

Glume colour : Tan coloured at early stage and straw coloured at maturity

Glume size : Partly covering the grain

Seed colour : Pearly white

Seed size : Medium

Two identifiable and distinguishable morphological characteristics of the variety : Long and semi compact earhead Medium sized grain, pearly white grains

Yield :

Commercial product : 3000-6000 kg/ha.

Seed : 2500-4000 kg/ha.

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35. Crop : Snakegourd

Variety : Co. 2

Year of release : 1986

Parentage : Coimbatore local short pudal

Institute responsible for maintaining the breeders' seed stock : Deptt. of Pomology and Olericulture, Faculty of Horticulture, Tamilnadu Agril. University, Coimbatore - 641 003.

Description of the variety :

(i) Plant height : Plant is a trailer, vines moderately vigorous, medium spreading hence adopted for closer spacing (2.0 m × 2.0 m).

(ii) No. of branches : 2-3 at the base

(iii) Spread : 4 square meters; does not require pandal

(iv) Colour of the stem : Light green

(v) Colour of the leaf : Light green

(vi) Size of leaf : Length : 35-40 cm. Breadth : 20-25 cm.

(vii) Shape : Round with prominent lobes

(viii) Fruit character :

(a) Shape : Cylindrical, short

(b) Length : 35-50 cm

(c) Girth : 15-18 cm

(d) Weight : 350-650 g.

(e) Colour of unripe fruit : Greenish white (ashy coated bloom)

(f) Colour of ripe fruit : Light orange

(g) Pulp to seed ratio : 14.5

(h) No. of fruits/plant : 6-10

Maturity :

(1) No. of days taken from sowing to first flowering : 40 days

(2) Node at which the first female flower appears : 18th/node

(3) Male female ratio : 14 : 1

(4) No. of days taken from sowing to first harvest : 55-60 days

(5) Total duration : 105-120 days

Two identifiable and distinguishable morphological characters : (1) Vines trail on the ground and medium spreading.
(2) Fruits are short cylindrical with ashy bloom at harvestable maturity

Yield/ha. : 35 tonnes

36. Crop : Watermelon

Variety : Arka Jyoti (Hybrid)

Year of Release : 1984

Parentage : Female parent IIHR-20
Male parent Crimson Sweet

Institute responsible for maintaining the breeder's seed stock : Indian Institute of Horticultural Research, Bangalore - 560 080.

Description of hybrid and parents :	*Male Parent*	*Female Parent*	*Arka Jyoti* (F$_1$ Hybrid)
(1) Plant height (vine length) :	350 cm	300 cm	300 cm
(2) Stem & foliage :	Light green deeply lobed foliage	Dark green deeply lobed foliage	Dark green deeply lobed foliage
(3) Distinct fruit characters :	Oval fruit, light green ground colour with green to dark green stripes, crimson flesh, average fruit weight 5 kg, 1-2 fruits per vine.	Oval to round fruits green ground colours with deep blue angular stripes, red flesh, average fruit weight 3 kg, 2-3 fruits per vine TSS 11-12%.	Round to Oval fruits light green ground colour with green to lush green angular stripes crimson flesh, average fruit weight 5 kg. 2-3 fruits per vine, TSS 12-14%.

(c) Maturity group : Medium

Average yield under normal conditions : At different locations in state trials from 1984-85 to 1989-90 - 1777 Kg./Ha.

Agency responsible for maintaining breeder's seed : Department of Plant Breeding, HAU, Hisar.

ANNEXURE V

Proforma for submission of the proposal for denotification of Crop/Variety under Section 5 of the Seeds Act, 1966

1. State

2. Crop

3. Name of the variety

4. Year of notification and S.O. number

5. Name of the originating Breeder/Institute of the variety

6. Reasons for denotification

7. Names of the varieties which have replaced/will replace the denotified variety

8. Recommendation of the All India Workshop about the denotification of the variety

Signature of the Chairman/
Convenor, State Seed Sub-
Committee/Sponsoring Authority

Name :

Designation

सत्यमेव जयते

Proceedings of the Seventh Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 11th December, 1986 under the Chirmanship of DDG (CS), ICAR

The list of the participants is attached as Annexure I.

2. The Chairman welcomed the members and emphasised the role of the sub-committee and importance of correct evaluation of the varieties for Release and Notification. He mentioned that varieties play an important role and one of the important tools to increase the productivity of the crops. However, the release of inferior variety does not serve any purpose and Committee should exercise its power judiciously so that only good varieties are released and notified.

3 Dy. Secretary (Seeds) mentioned that lately, it has been observed that varieties are being released on large scale and newly released varieties are not becoming popular among the farmers. Therefore, the Committee should critically evaluate all the proposals and the varieties which merit release and notification should be recommended and inferior varieties are discouraged.

4. During the evaluation of the various proposals, the Committee suggested various steps to improve the process of release and notification. The decisions taken in this regard are as follows:

(i) a small Committee should be constituted to screen such proposals as considered by the Secretariat to be incomplete. The list with details could be put up to the Sub-Committee for information and advice. This will help to save a great deal of time of the sub-Committee.

(ii) whenever a proposal of hybrid is submitted, the sponsoring authority should indicate the technique of seed production and other relevant details related to seed production such as syncronisation of male and female parents, precautions to be taken during seed production and details of the morphological characters of the female and male parents so that the seed producers and seed certification agencies could undertake the certified seed production with authentic information;

(iii) the proforma meant for release and notification needs be re-evaluated commodity-wise by a small Committee so that they can be further improved upon;

(iv) the sponsoring authorities should be advised to submit the data with regard to disease and pest, reaction. agronomic features and recommendations of the Workshop in detail so that proposals are properly evaluated by the Committee:

(v) the sponsoring authorities of the proposals of notification should clearly indicate the recommendations of the Workshop in column No. 12. To authenticate their statement, documentary proof such as copy of the proceedings of the Workshop, data generated in the coordinated trials etc. should be enclosed along with the proposal.

(vi) the recommendations of the Workshop in column No. 12 was not given in a proper form by various sponsoring authorities of the proposals of notification. It was, therefore, decided that in such cases, the Secretariat of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties should write to the concerned Project Coordinator to indicate the correct position. It was also decided that a letter would go from DDG (CS), ICAR to the concerned Project Directors/Coordinators with the request to indicate their views within a specified time limit;

(vii) the composition of the Screening Committee and Evaluation Committee for present proforma would be decided in consultation with DDG (CS), ICAR.

5. After this, the regular Agenda was taken up for discussion and the position in respect of each item is indicated below:

Item No. 1: Confirmation of the minutes of the Sixth Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 16th May 1986.

6. The minutes of the earlier meeting were confirmed.

Item No. 2: Review of action taken on the minutes of the Sixth Meeting of Central Sub-Committee on Crop Standards. Notification and Release of Varieties.

7. The position indicated in the Agenda Notes was noted by the Sub-Committee/participants.

8. Thirty four proposals of various varieties of different crops were evaluated for Release and Notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal are indicated as under:—

9. Details of the varieties recommended for Release and Notification:

The following varieties were recommended for notification for the entire country and area of cultivation is indicated against each variety:

S. No. (1)	Crop (2)	Variety (3)	Remarks (4)
(i)	Hybrid Bajra	MBH-130	Recommended for release and cultivation in Bajra growing tracts of India (Maharashtra, Tamilnadu Andhra Pradesh, Gujarat, Rajasthan, Uttar Pradesh Punjab and Haryana.
(ii)	Cowpea	Pusa Komal (L-1552)	Recommended for release and cultivation during spring. summer, summer Kharif and late-kharif and late-kharif sowing under Northern Indian conditions. In rest of the country, this variety can be grown round the year.
(iii)	Guinea grass	PGG-9	Recommended for release and cultivation in plains of Punjab and Himachal Pradesh.
(iv)	Maize composite	MCU-508	Recommended for release and cultivation all over India including Rajasthan except Zone-II (States of Punjab and Haryana)
(v)	Field pea	Pant P-5	Recommended for release and cultivation in entire North Western plains zone of the country comprising the States of Uttar Pradesh, Punjab, Haryana, Delhi and Rajasthan.
(vi)	Paddy	Pusa-205	Recommended for release and cultivation under assured irrigated wet land condition of Orissa, West Bengal, Punjab and Madhya Pradesh.
(vii)	Potato	Kufri Swarna	Recommended for release and cultivation in South Indian Hills.
(viii)	Raya	Saurabh	Recommended for release and cultivation in irrigated areas of North Western Zone comprising Haryana, Punjab, Rajasthan, Himachal Pradesh, Jammu & Kashmir, Delhi & Gujarat.
(ix)	Hybrid Sunflower	MSFH-1	Recommended for release and cultivation in Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu (for all over India in Sunflower growing area).
(x)	Tomato	Punjab Chhuhara*	Recommended for release and cultivation throughout the country.
(xi)	Tobacco	Line 1494**	Recommended for release and cultivation in transition zones of Karnataka, the F.C.V. Tobacco growing belt particularly, the higher rainfall areas in Mysore, Coorg and Hassan Distt. which are endemic to powdery mildew disease.
(xii)	Tobaccoo	MC Nair-12**	Recommended for release and cultivation in Northern light soils of Andhra Pradesh.
(xiii)	Tobacco	Jayasri M.R.**	Recommended for release and cultivation for black-soils of all districts and also in the light and loamy soils of Prakasam District of Andhra Pradesh.
xiv)	Tobacco	II-435**	Recommended for release in Natu Tobacco growing belt of Guntur (Andhra Pradesh).
(xv)	Wheat	MACS-1967	Recommended to release for cultivation in rainfed areas in Peninsular Zone.

Details of the Morphological characters etc. of the released varieties are given in Annexure II.

*Already notified vide SO No. 13 dated 19-12-78.

**Seeds of Tobacco are not covered under Seeds Act and hence not recommended for notification.

10. Details of the varieties which were not recommended for Release :

S. No.	Crop	Variety	Remarks
1	2	3	4
(i)	Arhar	Pant A-3	The variety was not recommended for release because it has been reported highly susceptible to the pod borer complex and not found superior in yield in comparison to other varieties.
(ii)	Barley	Karan-3	The Committee discussed and evaluated the proposals and observed that sponsoring authority did not submit all the information required to evaluate the proposal. The Committee further unanimously decided not to consider the proposal till all relevant information is submitted.
(iii)	Barley	Karan-16	
(iv)	Barley	Karan-18	
(v)	Barley	Karan-19	
(vi)	Bajra	HHB-50 (MH-200)	The variety has already been released for Haryana State and thus not recommended for release. However, the variety was recommended for Notification under Seeds Act.
(vii)	Carrot	Pusa Yamdagni	The sponsoring authority might resubmit the proposal indicating yearwise trial data and complete description of variety.
(viii)	Cauliflower	K-I (Pusa Snowball K-I)	The sponsoring authority might resubmit the proposal along with data of disease reaction and detail of parentage.
(ix)	Cauliflower	Pusa Shubhra (6-1-2-1)	The sponsoring authority might resubmit the proposal along with complete data specially on disease reaction and also description of parentage and quantity of Breeder seed available.
(x)	Groundnut	LG-19	The proposal might be resubmitted along with data of coordinated trials and recommendation of Workshop.
(xi)	Maize	Hans (P.K. Hunius)	The proposals for the release of four composites of Maize were considered for the maturity Groups B (90-95 days). Since the maturity period difference between 'B' and 'C' Groups is only of 10 days and keeping in view that three composites (Ageti-76, Tarun and Hunius) were already available as released checks, it was decided that the Committee may consider releasing only the best one or two composites out of four proposals received in its next meeting. Meanwhile, Project Coordinator (Maize) may be requested to submit a comparative statement concerning advantages and disadvantages of the new proposals against all the three composite checks already released. Specific merits of any of the new composites (yield, disease/pest resistance, quality, etc. be supported by substantial data/information etc.) indicating the quantity of breeder seed availability may be submitted. Also seed samples of three new composites be obtained along with those of the three checks stated above for examination by Committee.
(xii)	Maize	Kiran (J-660)	
(xiii)	Maize	Mansar-Super Composite	
(xiv)	Maize	Navjot (J-684)	
(xv)	Muskmelon	Punjab Hybrid (Hybrid Melon)	The sponsoring authority might resubmit the proposal indicating data on keeping quality earliness and seed production technique and description of the male sterility might also be indicated.
(xvi)	Pea	Punjab-88	The variety was not recommended for release due to its reported susceptibility to various diseases and pests and no yield advantage was observed.
(xvii)	Safflower	APRR-3 (Sugar Mutyalu)	The sponsoring authority might resubmit proposal along with data of All-India Coordinated Project trials.
(xviii)	Tomato	S-152 (Pusa Gaurav)	The sponsoring authority might resubmit the proposal along with more data on yield and disease reaction and also the quantity of breeder seed available.
(xix)	Sorghum	SPU-462 (CSV-12)	The variety has already been notified vide S.O. No. 867 (E) dated 26-11-86. The variety was not recommended for release for the proposed specific area as it has not performed distinctly superior to the other varieties already released for these areas.

Item No. 4: Consideration of the proposals for notification under Section 5 of the Seeds Act.

11. Sixty three proposals of different varieties of various crops were considered for Notification and the decision of the Central Committee on Crops Standards, Notification and Release of Varieties in respect of each variety is indicated as under·

12. Detail of varieties recommended for Notification under Section 5 of the Seeds Act:

Sl. No.	Crop/Variety recommended for notification
(i)	Barley—PL-172
(ii)	Bajra—HHB-50
(iii)	Brinjal—Jammunigola
(iv)	Wheat PBW-138*
(v)	Wheat PBW-65*
(vi)	Wheat PBW-120*
(vii)	Bittergourd-Punjab-14
(viii)	Carrot-Selection-21*
(ix)	Cotton-G. Cot-14
(x)	Cotton-LH-900*
(xi)	Cotton F-505*
(xii)	Cowpea-RC-19
(xiii)	Chillies-Punjab Lal*
(xiv)	Gobhi Sarson-GSL-1
(xv)	Groundnut-SG-84*
(xvi)	Groundnut-TG-3
(xvii)	Sesamum-TMV-3
(xviii)	Linseed-Laxmi-27
(xix)	Kutki-Jawahar Kutki-2 (*Panicum milliare*)
(xx)	Moong-ML-267
(xxi)	Peas-RPG-3 (Graintype)
(xxii)	Peas-JP-179
(xxiii)	Paddy -Jawahar Dhan-75
(xxiv)	Paddy-PR-108
(xxv)	Paddy-KMDP-1 (Avinash)
(xxvi)	Paddy-KMDP-2 (Abhilash)*
(xxvii)	Paddy-Vajram
(xxviii)	Paddy-Pratibha
(xxix)	Paddy Pothana
(xxx)	Paddy Narendra-2 (IET 4555)
(xxxi)	Paddy-Narendra-80
(xxxii)	Ricebean-RBL-1
(xxxiii)	Sorghum-Gujarat Jowar-37
(xxxiv)	Safflower-Jawahar Safflower-1
(xxxv)	Soyabean-JS-75-46
(xxxvi)	Soyabean SL-96*
(xxxvii)	Tomato-Punjab NR-7
(xxxviii)	Toria-PT-30
(xxxix)	Black Gram-Jawahar Urid-2
(xl)	Black Gram-Jawahar Urid-3
(xli)	Black Gram-Pant U-35*
(xlii)	White Clover-Palampur Composite-1

Details of the Morphological characters etc. of the above varieties are given in Annexure III.

* Subject to the authentication of the statement made in the proposal under column No. 12 related to the recommendation of the All-India Workshop about the variety by the concerned Copy Project Director/Coordinator.

13. Detail of the varieties not recommended for notification:

The sponsoring authorities are advised to resubmit the proposal along with recommendation of the All-India Workshop about the variety. It is also advised to enclose the extract of the proceedings of the All India Workshop pertaining to the concerned variety:

Sl. No.	Crop/Variety
(i)	Bajra Napier Hybrid-PBN-83
(ii)	Bhindi-Punjab-7
(iii)	Capsicum-Punjab Mirch-27
(iv)	Chilli-Jawahar Mirch-218
(v)	Gram-Jawahar Gram-74
(vi)	Groundnut-TG-14
(vii)	Paddy-Himalaya-741
(viii)	Paddy-PR-109
(ix)	Paddy-Onam
(x)	Paddy-Bhagya
(xi)	Paddy-Swarna Prabha
(xii)	Paddy-Rasmi
(xiii)	Paddy-Vyttila-3
(xiv)	Paddy MO-7 (Karthika)
(xv)	Ragi-Indaf-9 (Chitta)
(xvi)	Sesamum-ACV-1 (Soma)
(xvii)	Sesamum-ACV-2 (Surya)
(xviii)	Sweet Potato-Jawahar Sakarkand-145
(xix)	Soyabean-Jawahar Soyabean-76-205
(xx)	Triticale-TL-1210

14. Detail of varieties rejected for notification.

(i) Paddy– IR-50

Item No. 5: Status of the varieties conditionally notified in the previous meetings of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

15. The position indicated in the Agenda Notes was noted by the Sub-Committee/participants. It was further recommended that sponsoring authorities might also be informed accordingly.

16. The recommendation of the P.D. with regard to Gram variety Avrodhi was informed to the members and keeping in view the favourable report, the variety was recommended for notification

Item No. 6: Release and Notification of Wheat variety Triveni

17. The Wheat variety Triveni was approved for release and notification.

Item No. 7: Notification of the Hybrid Bajra variety GHB-30.

18. The Hybrid Bajra variety GHB-30 was approved for notification.

19. The meeting ended with a Vote of thanks to the Chair.

ANNEXURE I

List of the participants who have attended the 7th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 11th December, 1986 under the Chairmanship of Dy. Director General (CS), ICAR in Krishi Bhavan, New Delhi

1. Dr. D.N. Srivastava, *Chairman*
DDG (CS), ICAR.

2. Dr. P.K. Agrawal,
Head, Divn. of Seed Science
& Tehnology, IARI, New Delhi-110012.

3. Dr. Munshi Singh,
Head, Genetics, IARI, New Delhi.

4. Dr. J.P. Tandon,
Project Director (Wheat)
(Also Rep. Director, IARI)

5. Shri M.M. Payak,
Scientist, Divn. of Mycology, IARI,
New Delhi.

6. Shri N.N. Mehta,
Director of Agriculture,
Madhya Pradesh, Bhopal.

7. Shri B.R. Barwale,
MAHYCO, Bombay.

8. Shri K.Z. Thakare,
Farmer, Deoli, Wardha, Maharashtra.

9. Shri G.S. Shekhawat,
Head, Plant Pathologist, CPRI, Simla.

10. Capt. V.N. Kumar,
Managing Director, Terai Beej Pvt. Ltd.,
Bajpur, Distt. Nainital (UP).

11. Dr. Rajender Singh Tehlan,
V&PO. Dichaon Kalan,
New Najafgarh, New Delhi.

12. Shri L.S. Kingra,
Director of Agriculture,
Himachal Pradesh, Simla.

13. Shri B.U. Modi,
Director,
Gujarat State Seed Certification Agency,
Ahmedabad.

14. Shri S. Venkata Reddy,
Director,
A.P. State Seed Certification Agency,
Hyderabad.

15. Shri B.S. Gill,
Director,
Punjab State Seed Certification Authority,
Chandigarh.

16. Shri J.N. Johri,
Director,
Rajasthan State Seed Certification Agency,
Jaipur.

17. Shri B.N. Sehgal,
Chief Seed Certification Officer,
Joint Director Agriculture,
Delhi Admn. Delhi.

18. Shri K.P. Singh,
Director,
Haryana State Seed Certification Agency,
Chandigarh.

19. Shri A.V. Torke,
Director,
Karnataka State Seed Certification Agency,
Bangalore.

20. Shri R.R. Sharma,
Director, U.P. State Seed Certification Agency,
Lucknow.

21. Shri I.S. Bist,
Dy. Secretary (Seeds), Ministry of Agriculture,
Department of Agriculture & Coopn., Krishi Bhavan,
New Delhi. (Member-Secretary)

Special Invitees :

22. Dr. R.S. Paroda,
Director, NBPGR, Pusa, New Delhi.

23. Dr. S. Lal, ADG (F & FC),
ICAR, Krishi Bhavan, New Delhi.

24. Dr. S. Chandra,
OSD (Pulses), ICAR,
Krishi Bhavan, New Delhi.

25. Dr. C. Kempana,
ADG (CC), ICAR,
Krishi Bhavan, New Delhi.

26. Dr. Ram Phal,
ADG (Hort.), ICAR,
Krishi Bhavan, New Delhi.

Others

27. Shri M.S. Bajwa,
Dy. Director Agri. (Seeds),
Punjab, Chandigarh.

28. Shri M.A. Khan,
Dy. Director Agriculture,
Rajasthan, Jaipur.

29. Shri R.C. Srivastav,
DSSCO, MP State Seed Certification Agency,
Bhopal.

30. Shri T. Ganapathi,
Addl. Director of Agriculture, Madras.

31. Shri R.S. Raman,
Director, CRRI, Cuttack-6.

32. Shri Videsh Kumar,
Addl. Director Agriculture, MP, Bhopal.

33. Shri V.S. Chaudhary,
Jt. Director Agriculture (S&F),
UP, Lucknow.

34. Shri B.S. Verma,
Chief Seed Certification Officer (HQ),
Haryana, Chandigarh.

35. Shri R.L. Kapoor,
Sr. Plant Breeder, HAU, Hissar.

36. Shri N.S. Tunwar,
OSD (QC&T),
Ministry of Agriculture,
Department of Agriculture & Coopn.,
F/118, Shastri Bhavan, New Delhi.

37. Shri S.V. Singh,
Dy. Seed Officer, Ministry of Agriculture,
New Delhi.

38. Shri M.S. Shukla,
Dy. Seed Officer,
Ministry of Agriculture, New Delhi.

39. Shri R.K. Mathur,
Asstt. Director (Seeds),
Ministry of Agri., Deptt. of Agri. & Coopn
F/218, Shastri Bhavan, New Delhi.

40. Shri D.S. Mishra,
STA/Sh. Ghore Lal,
STA/Sh. R.S. Chhonkar
TA (Seeds)

41. B. Raju Naidu,
Dy. Director of Agri. (Seed Certification),
Coimbatore.

ANNEXURE II

The important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Seventh Meeting held on 11th December, 1986

1.	**Crop**	Bajra (Pearl Millet) (*Pennisutum americanum* (L))
	Variety	MBH-130
	Sponsored by	The Project Coordinator (Millets), AIMICP, College of Agriculture, Pune-411 005.
	Parentage	Mahyco M.S.-2 × PL No. 4

Description of the variety :

Plant height	180 to 185 cms.
Days to flowering	50 to 55 days
Days to maturity	80 to 85 days
No. of tillers	3 to 5 in No. per plant
Leaf colour	Broad light green leaves
Lodging	5 to 10%
Earhead length	30 to 40 cms.
Earhead girth	10 to 12 cms.
Earhead shape	Conical
Presence of bristle	Yes
1000 grain weight	11 to 13 gms.
Grain colour & size	Shining bluish dark slate colour with bold grain
Pollen shedding	Good
Grain yield per Ha.	38 to 40 Quintals.
Fodder yield per Ha.	7 to 8 tonnes.

Description of Parents :

Sl. No.	Particulars	Female (Mahyco Male sterile No. 2)	Male Pollinator No. 4
(1)	Plant height	180 to 185 cms.	140 to 165 cms.
(2)	Days to flowering	45 to 50 days	55 to 60 days
(3)	Days to maturity	75 to 80 days	90 to 95 days
(4)	No. of tillers	3 to 4	2 to 3
(5)	Earhead girth	10 to 12 cms	8 to 10 cms.
(6)	Earhead length	30 to 35 cms.	20 to 25 cms.
(7)	Earhead shape	Conical	Conical slightly tapering at tip.
(8)	Presence of bristle	Yes	No
(9)	Colour of bristle	Pink	—
(10)	Colour of Earhead	Blackish pink of matured earhead	Green
(11)	Grain characters	Bold grain pearly shining slate. 1000 grain weight is 10 to 12 gms.	Medium grain light slate. 1000 grain weight is 8 to 10 gms.
(12)	Seed yield per ha.	10 to 12 qtls.	6 to 10 qtls.
(13)	Colour of Node	Green	Normal green
(14)	Pubescence of leaves	Smooth	Smooth
(15)	Colour of leaf	Light yellowish green	Green
(16)	Reaction to disease:		
	(a) Downy mildew	Resistance	Resistance
	(b) Ergot	Susceptible	Less susceptible
	(c) Rust	Susceptible	Susceptible

Agency responsible for maintaining breeder seed stock : Research Department, Maharashtra Hybrid Seeds Co. Ltd., Jalna.

2. Crop	:	Cowpea
Variety	:	Pusa Komal (L-1552)
Sponsored by	:	IARI Regional Station, Karnal-132001 (Hr.)
Parentage with details of its pedigree	:	Pedigree : (P-85-2 × P-426) × P-85-2 × Pusa Dofasli)
Description of the variety	:	The Plants are bushy and determinate throwing short vines when light and temperatures are low and soil moisture is high. It is photoinsensitive, less vegetative, flowers in 45-50 days and synchronous in pod bearing. The first flush is so intense that even the leaves are not visible due to heavy podding. The peduncles are long and prominent. The pods are 20 to 22 cm long, non fiberous, cylindrical and light green in colour. The length of pods between two seeds is comparatively more and thus make the pods meaty. The seed colour is buff with prominent brown hilum. The seed surface is rough. It flowers in 45-50 days and first green pod harvesting is done after 60-65 days of sowing. Subsequently second and third harvesting are done after 70 & 80 days of sowings.
Agency responsible for maintaining breeder's stock	:	Indian Agricultural Research Institute Regional Station, Karnal-132001 (Haryana).

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3. Crop	:	Guinea Grass (*Panicum maximum* Jacq.)
Variety	:	PGG-9
Sponsored by	:	Punjab Agricultural University, Ludhiana, Punjab.
Parentage with details of its pedigree	:	Developed from a cross between sexual line CPI-63540 and obligate apomictic bold-seeded line 60013.
Description of the variety	:	
(i) Plant height	:	106 cm
(ii) Distinguishing morphological characters	:	Slightly hairy at the junction of leaf sheath and leaf blade. Panicle whitish in colour and more compact than Hamil. Seeds are bolder than Hamil.
(iii) Maturity (range in number of days seeding to flowering, seed to seed)	:	The crop takes 60 days from sowing to first cutting. Subsequent cuttings are ready after an interval of 35 days. It takes about 60-65 days from last cutting for fodder to maturity of seed.
Agency responsible for maintaining breeder's stock	:	Punjab Agricultural University, Ludhiana, Punjab.

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4. Crop	:	Maize (*Zea mays* 1.)
Variety	:	MCU 508
Sponsored by	:	All India Coordinated Maize Improvement Project.
Parentage with details of its pedigree	:	This variety was developed from the Indian Pool V, using unit selection. The basic pool involved following ten elite early maturing varieties with yellow kernels : Yugoslav Compp × Kulu Local, Syn. 551, YUZPSC 7 C G4, Hunius, Oberegon 7448, Phil DMR 5, Basi, VL 42, Bihar Early in Antigua Gr. I. Multiple convergent Units of Size six were developed, this Unit (MCU 508) was selected from the large Number which were evaluated from this pool.
Description of the Composite :		
(a) Plant height	:	It ranges from 140 to 180 cm. The ear height varies from 55 to 75 cm.
(b) Distinguishing morphological characters	:	It is a very early maturing variety (maturity group D) with medium to short statured plants and well developed stalk, good husk cover, ears are medium to short cylinderical with yellow semi-flint grain.
(c) Maturity	:	It is a very early maturing variety which belongs to the D-maturity groups It is comparable with composite Diara in maturity. It took 45-50 days to 50% tassel and 49-51 days to 50% silk emergence.
Agency responsible for maintaining breeder seed stock	:	All India Coordinated Maize Improvement Project.

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5. Crop	:	Field Pea (*Pisum sativum* L.)
Variety	:	Pant P-5
Sponsored by	:	G. B. Pant University of Agril. & Tech., Pantnagar (Nainital), U.P.
Parentage with details of its pedigree	:	It is evolved from an intervarietal cross of T 10 × T 163 pedigree method of breeding was used from F_1 onwards after hybridization.

Description of the variety

Height (cm) : 162
Foliage colour : Light green
Leaf : Pinnately compound
Days to 50 % flower : 60
Flower colour : White
Days to maturity : 132
No. of pods/axil : 1.93
No. of seeds/pod : 4.9
Seed colour : White
100 seed wt. (gm) : 19.06
Reaction to powdery mildew : Highly resistant
Yield kg/ha in NWP Zone in the Co-ordinated trials : 2143

Agency responsible for maintaining the breeder seed : G. B. Pant University of Agril. and Technology, Pantnagar-263145 (U.P.)

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6. Crop : Paddy (*Oryza sativa* L.)

Variety : Pusa-205 (IET-7279)

Sponsored by : Head, Division of Genetics, IARI, New Delhi-110012.

Parentage with details of its pedigree : IR 28 × Pusa 33-18

Description of the variety :

(a) Plant height : 95-100 cms.

(b) Distinguishable morphological characters : Semi dwarf, dark green, erect leaves, slow senescence, flag leaves remain green after maturity pubescent, moderate tillering, stigma colourless, husk colour straw white, apiculus straw white and straight, panicle intermediate (26 cms) with high fertility weight (180 grains/panicle) and fully exerted, test grain weight (1000 grain weight) of the variety is 23.0 gms.

(c) Maturity : 125 days (seed to seed)

Agency responsible for maintaining the breeder's seed stock : Divisions of Genetics, IARI, New Delhi.

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7. Crop : Potato (*Solanum tuberosum* L.)

Variety : Kufri Swarna (Son-110)

Sponsored by : Director, Central Potato Research Institute, Simla.

Parentage with details of its pedigree : Kufri Jyoti × (VTn) 2-62.33.3

Description of the variety :

(a) Plant height : 75-100 cm at 90 kg N, 135 kg P_2O_5 and 90 Kg K/ha.

(b) Distinguishing morphological characters :

(i) Haulm : Tall (75-100 cm), erect, compact, foliage dark green
(ii) Stems : Few (3-5 stems), thick (0.8 to 1.2 cm dia.), wings prominent (2.0—2·5 mm)
(iii) Leaf : Open rachis green
(iv) Leaflets : Moderately pubescent, ovate, medium size, mean length 7.5 cm and width 4.5 cm, margin entire sometimes terminal leaflets fused, leaf index 75.
(v) Foliage colour : Dark green
(vi) Folioles : 4-5 pairs, medium in size
(vii) Tubers : Mostly medium size (4-6 cm dia.), Oval to round, skin white, smooth, eyes fleet, flesh white.
(viii) Sprouts : Light blue-purple
(ix) Inflorescence : Simple, scafold cyme
(x) Flowers : White profuse, persistent, 2-5% pollen fertility, forms natural berries

(c) Maturity (Range in days) : 105 days in autumn season
110 days in summer season

Agency responsible for maintaining breeder's seed stock : Central Potato Research Institute, Simla-171001.

8. Crop : Raya (Indian Mustard)
Variety : Saurabh (RH-8113)
Sponsored by : Department of Plant Breeding, HAU, Hissar.
Parentage with details of its pedigree : T59 × RC 781

Description of the variety :

(a) Days to flowering : 65
(b) Days to maturity : 150
(c) Plant height (cm) : 248
(d) No. of branching : 21
(e) Seeds per siliqua : 14
(f) 1000-seed weight (g) : 3.8
(g) Oil content (%) : 40.4

Agency responsible for maintaining breeder seed : Oilseed Section, Department of Plant Breeding, Hissar.

9. Crop : Sunflower
Variety : MSFH-1
Sponsored by : XXVIII Annual Kharif Oilseeds Workshop of Sunflower, 1986 held at A.P.A.U., Rajendranagar, Hyderabad-500 030.
Parentage : MHS-71 × MHR-48 (Single cross)

Special features of the hybrid :

(a) Days to 50% flowering : 55 to 60 days
(b) Plant height : 170 to 180 cms
(c) Leaf type : Large broad, serrated
(d) Head diameter : 15 to 20 cms
(e) Centre filling : Good centre filling
(f) Days required for maturity : 85 to 90 days
(g) Plant pigmentation : Normal green
(h) Oil content : 39 to 41%
(i) Pollen shedding (Monohead type hybrid) : Profuse pollen
(j) Yield per hectare : 13 to 15 Quintals.

Description of parents

Sl. No.	Particulars	MHS-71 (Female)	MHR-48 (Male)
(1)	50% flowering	64 days	55 days
(2)	Plant height	150 to 160 cms	120 to 130 cms
(3)	Head	Rounded forehead (Monohead)	Branching type
(4)	Diameter	15 to 20 cms	Multi flower
(5)	Leaves	Light green colour, broad leaves	Small size leaves (deltoid type)
(6)	Pigments	Normal	Reddish pigments on petioles and stem.
(7)	Oil content	38 to 40%	37 to 39%
(8)	Fertility	Sterile	Fertile, gives sufficient pollen

Agency responsible for maintaining breeder's seed stock : Maharashtra Hybrid Seeds Co. Ltd., Jalna.

10. Crop : Tomato
Variety : Punjab Chhuhara
Sponsored by : Deptt. of Vegetable Crops, Landscaping & Floriculture, Punjab Agril. University, Ludhiana.

Description of the variety :

(a) Distinguishing morphological characters : Foliage dense, Plants dwarf and bushy fruits medium sized, pear shaped fleshy bilocular, pericarp thick, colour uniform red.

(b) Maturity in number of days from sowing to first and 50% harvest :

	Nov. Planting	Feb. Planting
I harvest	135	90
50%	145	100

Agency responsible for maintaining breeder's stock : Deptt. of Vegetable Crops, Landscaping and Floriculture, P.A.U., Ludhiana

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11. Crop : Flue cured Virginia Tobacco

Variety : Mc Nair 12

Sponsored by : Director, Central Tobacco Research Institute, Rajahmundry-533 105.

Parentage : An exotic variety from USA introduced into India.

Description of the variety :

(a) (i) Plant height : 1.1m (under topped condition)

(ii) Curable leaf No. : 20-22

(b) Distinguishing morphological features : A short but vigorous type with dark cast and erect plant type. Leaves are broad, ovate, inserted vertically giving a bonquet shape, leaves puckered margin entire, tip acuminate, inflorescence compact and medium in flowering time and internodes are close.

(c) Maturity : Comes to maturity in about 65 days.

Flowering time : Flowers in about 60-65 days after planting.

Agency responsible for maintaining breeder's seed stock : Division of Genetics and Plant Breeding, Central Tobacco Research Institute, Rajahmundry,

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12. Crop : Flue-cured Virginia tobacco (*N. Tabacum* L.)

Variety : Jayasri (MR)

Sponsored by : The Director, Central Tobacco Research Institute, Rajahmundry (AP)

Parentage : Jayasri × TMVRR-3

Description of the variety :

(a) (i) Plant height : 1.85 m

(ii) Number of curable leaves per plant : 26-28

(b) Distinguishing morphological characters : Tall and vigorous, semi-open in habit with a slightly semi-broad ovate moderately puckered medium bodied moderately green vertically inserted leaves and short internodes resembling a bonquet appearance. 26-28 curable leaves with medium maturity. Can harvest 2-3 leaves per pick. Leaf length 24.0 cm and leaf width 7.5 cm.

(c) Maturity : Matures in 70-75 days after transplanting.

Flowering time : Flowering in about 75-80 days after planting.

Agency responsible for maintaining the breeder's seed stock : Division of Genetics and Plant breeding, Central Tobacco Research Institute, Rajahmundry-533105 (AP)

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13. Crop : Natu tobacco (Desi) (*N. tabacum* L.)

Variety : II-435

Sponsored by : Director, Central Tobacco Research Institute, Rajahmundry-533105 (AP)

Parentage : I-452 Karuvazhai × Rayala (Jonnalagadda)

Description of the variety :

(a) Plant height : 151.25 (upto crow foot capsule) 101.25 cm (Topped)

(b) Distinguishing morphological features : It is a moderately broad and long leaved variety with desirable leaf shape and arrangement. It is a late maturing cultivar gives about 18 heavy bodied curable leaves after topping. It cures to dark brown colour. Open plant habit. Medium internodal length with greenish stem, smooth, thick and slightly twisted leaves arranged upright to the stem. Margin is entire, late maturing and auricle development is medium. The leaves are measuring about 57 cm long, 23 cm wide in bottom position.

(c) Maturity (Range in No. of days) : 75 to 80 days after transplanting.

Agency responsible for maintaining breeder's seed stock. : Plant Breeding Section, CTRI and Research Station, Guntur-4 (AP)

14. Crop	:	Flue-cured Virginia tobacco (*N. tabacum* L.)
Variety	:	Line 1494
Sponsored by	:	Director, Central Tobacco Research Institute, Rajahmundry-533105 (AP)
Parentage	:	Kanakaprabha (developed from Delerest × D.B. 101) improved by incorporating resistance to powdery mildew disease from donor parent Kuo-fan.
Description of the variety :		
(a) Plant height		1.85 m (untopped)
(b) Distinguishing morphological characters	:	Tall, pyramidal, semi-open habit. Broad cordate-elliptic leaves, wide at base and middle, tapering towards apex, inserted vertically with medium short intervals, green in colour turning lighter at maturity. Produces 20 to 22 curable leaves per plant measuring about 60 cm long and 25 cm wide in middle position.
(c) Maturity (Range in No. of days)	:	60 to 65 days after transplanting.
Agency responsible for maintaining breeder's seed stock	:	Plant Breeding Section, CTRI, Research Station, Hunsur-571 105 (Karnataka)

15. Crop	:	Wheat (*Triticum durum*)
Variety	:	MACS-1967
Sponsored by	:	Director, Maharashtra Association for the cultivation of Science, Law College Road, Pune-411 004
Parentage with details of its pedigree	:	Gulab CPAN 1471, developed by pedigree method.
Description of the variety:	:	
(a) Plant height	:	tall 80-90 cm depend on growing conditions. Reaches upto 115 cm if irrigated.
(b) Distinguishing morphological characters		
(i) early growth habit	:	Semi-erect
(ii) auricle colour & variety	:	Pink, Sparsely hairy.
(iii) Tillering capacity	:	moderate.
(iv) Colour of foliage & Stem	:	green; covered with waxy bloom.
(v) leaf angle	:	drooping
(vi) Ear shape	:	Fusiform
(vii) Ear density	:	medium-dense
(viii) ear length	:	medium-long
(ix) Awning	:	Fully awned.
(x) Peduncle shape	:	Slightly recurved
(xi) Awn arrangement	:	Spreading
(xii) Awn colour	:	Yellow
(xiii) glume colour	:	Yellow
(xiv) glume surface	:	glabrous, non-felted, wax coating
(xv) glume shoulder	:	oblique
(xvi) back shape	:	acuminate
(xvii) grain colour	:	Amber
(xviii) grain texture	:	hard
(xix) grain size	:	bold (50 g 1000 -grain weight)
(c) Maturity :	:	
No. of days for heading	:	65 to 70 days
No. of days for maturity	:	110 to 120 days.
Agency responsible for maintaining breeder's seed stock	:	AICWIP Centre of I.C.A.R. at the M.A.C.S., Pune.

16. Crop	:	Wheat (*Triticum aestivum* L.)
Variety	:	Triveni (K 8020)
Sponsored by	:	Economic Botanist (Rabi Cereals) C.S. Azad University of Agriculture and Technology, Kanpur-2.
Parentage	:	(Kalyan Sona × HD 1982) Pedigree method
Two important morphological features of the variety	:	(1) Spikes brown and bent (2) Peduncle curved

ANNEXURE III

Important features of the Varieties recommended for Notification in the 7th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop : Barley

Variety : PL 172

Parentage : RD 178 × DW 472

Breeder/Institute responsible for maintaining breeder's stock : Professor of Plant Breeding, PAU, Ludhiana.

Description of the variety : Six-rowed semi-dwarf stiff stemmed lodging resistant variety. Uniform thin-husked grains, suitable for malting. 1000 grain weight 45 gm.

Two identifiable and distinguishable morphological characteristics of the variety : Colourless leaf-sheath.

Yield :

(a) Commercial product : 17.5 qtls. per acre.

(b) Seed : 17.5 „ „ „

2. Crop : Bajra (*Pennisetum typhoides* (*Burm*) *S.* & *H.*)

Variety : HHB-50 (MH-208)

Pedigree : MS 81A × H 90/4-5

Plant height : 200 to 220 cm

Distinguishing morphological characters : High tillering, medium stem, 27-30 on long dense pointed heads, medium bold grain size.

Maturity (range in number of days seeding to flowering, seed to seed) : Seeding to flowering 47-50 days. Seed to seed 78-80 days.

Sponsored by : Haryana Agril. University, Hissar.

Description of variety/hybrid : The female parent MS 81A is a highly stable male sterile line with high degree of downy mildew resistance and possess good agronomic attributes. H 90/4-5, the pollinator parent possesses very high tillering capacity and is a profuse pollen producer. Its height is slightly taller than the female parent which is another desirable features in a pollinator parent.

Agency responsible for maintaining breeder's stock : HAU/ICRISAT/NSC

3. Crop : Brinjal

Variety : Jamuni Gola

Parentage : Pure line selection from the local material.

Breeder/Institute responsible for maintaining breeder's stock : Department of Vegetable Crops, Landscaping & Floriculture, PAU, Ludhiana.

Description of the variety : Plants are medium tall, spreading thornless fruits are oval round, medium sized, purple and plump. It is prolific bearer, heavy yielding and early maturing variety.

Two identifiable morphological characteristics of variety : (1) Plant medium tall thornless.
(2) Fruits are oval-round purple and single bearing habit.

Yield :

(Vts) Fruit 125/acre.

4. Crop : Bread Wheat (*Triticum aestivum* L.)

Variety : PBW-138

Parentage · RAVI 43 × HD 2177

Breeder/Institute responsible for maintaining breeder's stock. : Punjab Agricultural University, Ludhiana.

Description of the variety : PBW 138 is a double-dwarf variety with a plant height of 90 cm. It has long spikes with *red glumes* and fully developed awns. Its grains are vary bold amber and hard.

Two identifiable and distinguishable morphological characteristics of the variety	Its height is about 90 cm. Its leaves are erect in the early stages of growth. Its glumes are red.
Yield :	
(a) Commercial Product	19 q/acre under high-fertility, late sowing conditions.
(b) Seed	-do-

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5. Crop	Bread Wheat (*Triticum aestivum*)
Variety	PBW-65
Parentage	(USA255-K816) WL 202
Breeder/Institute responsible for maintaining breeder's stock	Punjab Agricultural University
Description of variety	PBW 65 is almost as tall as WL 410. It has bold long, red, fully-breared ears.
Two identifiable and distinguishable morphological characteristics of the variety	PBW 65 is a double-dwarf variety with erect in early stages of growth. It has red, non-hairy glumes and hard amber grains.
Yield :	
(a) Commercial Product	14 q/acre under rainfed conditions.
(b) Seed	-do-

5A. Crop	Bread-wheat (*Triticum aestivum*)
Name of the variety	PBW 120
Parentage	WG 377 × HD 2160
Breeder/Institute responsible for maintaining breeder's stock	Punjab Agricultural University
Description of variety	PWB 120 is a double-dwarf variety. It has white glumes . Its spikes are dense and fully awned. Grains are amber, hard bold and lustrous.
Two identifiable and distinguishable morphological characteristics of the variety	It has dense spikes and white glumes.
Yield :	
(a) Commercial Product	55 Qts. per hectare under high-fertility, timely sowing and irrigated conditions.

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6. Crop	Bittergourd
(a) Variety	Punjab -14
Parentage	Selection from the local material.
Breeder/Institute responsible for maintaining breeder's stock	Dept. of Vegetable Crops, land-scaping & Floriculture, Punjab Agricultural University, Ludhiana-141 004.
Description of variety	Vine length is short, More number of branches, foliage is dark gram leaflets are broader, fruits are green and oblong.
Two identifiable morphological characteristics of the variety	Growth habit: Short vines along with more branches. Fruits are oblong in shape.
Yield	130.0 Q/ha.

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7. Crop	Carrot
Variety	Selection-21
Parentage	Nantes × No. 29
Breeder/Institution responsible for maintaining breeder's stock	Dr. B.S. Sukhij, Asstt. Vegetable Breeder
Description of variety	Leave medium, straight, dark green leave. Root long deep red with red coca free of rest hairs.
Yield	175 Qt/acre

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8. Crop	Cotton
Variety	G. Cot. 14
Parentage	CP-5/5 × G. Cot. 10
Breeder/Institute responsible for maintaining breeder's stock	Research Scientist (Cotton), Main Cotton Research Station, Gujarat Agricultural University, Surat-395007.
Description of variety :	
(a) Plant height	110-120 Cms.
(b) Distinguishing morphological characters :	
(i) Foliage	Dark green

(ii) Habit	Monopodial and open growth habit
(iii) Leaf characters & colour	Dark green, broad and hairy sected with 2 or 4 lobes.
(iv) Flower	Pale yellow
(v) Pollen	Creamy white in colour
(vi) Petal spot	Absent
(vii) Boll characters	Round in shape, medium in size with good opening (Boll wt. 4.6 gms)
(c) Maturity (range of nos. of days) seedling/transplanting to flowering & seed to seed :	
(1) Seeding to flowering	60 to 75
(2) Seeding to boll opening	110 to 125
(3) Seed to seed	150 to 160
Yield :	
Commercial Product	19 qtls.
Seed per hec.	12 qtls.

9. Crop	Cotton (*Gossypium hirsutum* L.)
Variety	LH-900
Parentage	LH 223-480 × LH 223-343
Breeder/Institute responsible for maintaining breeder's stock	Senior Cotton Breeder and Zonal Coordinator (North Zone), Cotton Research Laboratory, PAU, Ludhiana.
Description of the variety	LH 900 is short statured (100-110 cm) tall, compact and sympodial with 15-20 symbols and 0-1 monopods is a short duration variety and vacates the fields in 155-160 days. The average yield of LH 900 is 11 qtls. per acre and has a yield potential of 16 qtls./acre. LH 900 is a medium staple variety and possesses 33.9 per cent ginning outturn. LH 900 is spinnable at '30 s' It is more tolerant to bacterial blight as compared to F 286. F 414 and LH 372 but is at par with others in jassid resistance.
Two identifiable and distinguishable morphlological characters of the variety	(a) Bright green leaves which are all slightly cupped upwards (b) Sympodial with 0-1 monopod. (c) Short statured (100-110 cm) with short internodes.
Yield :	
Commercial product (lint)	33.9% of seed cotton (*Kapas*)
Seed	66.1% Do.

10. Crop	Cotton (*Gossyplum hirsutum* L)
Variety	F-505
Parentage	F 414 × A 231
Breeder/Institute responsible for maintaining the breeder's stock	Senior Cotton Breeder, Faridkot/Punjab Agril. University.
Description of the variety	It is a new high yielding variety and semi spreadic variety recommended for cultivation throughout the Punjab State. This variety is superior to F 414 and F 286 with respect to boll number and boll weight. Its average boll number is 32.3 and boll weight 3.53 g. It has dark green foliage with good all bearing. It is fairly tolerant to jassid. It escapes the damage from boll works because of it early maturity. It vacates the field for timely sowing of wheat. Its average yield is 24 qtl. per hectare. Its mean fibre length is 23 2 mm and ginning outturn is 34.5%. The new variety possesses superior fibre and spinning qualities.
Two identifiable and distinguishable characters of the variety	(1) It has bigger and dark green leaves. (2) Early maturing with no left over bolls at full maturity.
Yield :	
Commercial product	34.6% (Average 24 qtls/ha with maximum potential of 36 qtls. ha.)
Seed	65.4%

11. Crop	Cowpea (*Vigna ungulculate* L) warp
Variety	RC-19
Parentage	Virginia × New Era (Single Plant selection from F2 bulk).
Breeder/Institute responsible for maintaining the breeder's stock	Sr. Pulse Breeder/A.E.B. (Regional), A.R.S. Navgaon/Durgapoura, Jaipur.
Description of the variety	Extra earliness in maturity (60-65 days crop) Higher yielder, tolerant to salinity various pests & disease under field conditions. Nodulation
Two identifiable and distinguishable morphological characteristics of the vareity	60-70 cm in height, less tendrils, seed colour fawn, synchronous maturity medium size pods with 11-13 seeds/pol.
Yield :	
Commercial Product	10-11 qtls/ha. 19.2% highly yield over C-152 & Table 1, 2, 3a
Seed	8.63% higher yield over V 16.

12.	Crop	Chillies
	Variety	Punjab Lal
	Parentage	Perennial × Long Red
	Breeder/Institute Responsible for maintaining the breeder's stock	Assoc. Prof of Vegetables, Deptt. of Vegetable Crops, Landscaping & Floriculture, PAU, Ludhiana.
	Description of the variety	Plant semi dwarf, foliage dark green Fruit erect type, medium size, highly pungent, dark red at maturity.
	Two identifiable morphological characterstics of the variety.	(1) Semi dwarf plant (2) Branching at the base (3) Fruit medium size, erect and highly pungent.
	Yield :	
	Fruit	48 qtls/acre.

13.	Crop	Gobhi Sarson (*Brassica napus*)
	Variety	GSL-1 (Gobhi Sarson Ludhiana-1)
	Parentage	Developed by selection from local materials.
	Breeder/Institute responsible for maintaining the breeder's stock.	Senior Scientist (Oilseeds), Department of Plant Breeding, PAU, Ludhiana
	Description of the variety/hybrid	It is a long duration variety, which matures in about 160 days. It has more profuse branching and longer rods than local variety. Its oil content is 44.65% It is recommended for cultivation in the State.
	Two identifiable and distinguishable morphological characterstics of the variety	(1) Plants are tall, late in flowering and maturity (2) Has broad pale green waxy leaves. Seeds are blackish brown and medium in size.
	Yield :	
	Commercial product	—
	Av. seed yield	20 q/ha.

14.	Crop	Groundnut (*Arachis hypogaea* L.)
	Variety	SG-64 (Spring Groundnut-84)
	Parentage	Selection from ICCS-1
	Breeder/Institute responsible for maintaining the breeder's stock	Senior Scientist (Oilseeds) PAU, Ludhiana.
	Description of the variety/hybrid	SG-84 is a spanish bunch variety which matures in about 120 days. The mainshoot attains a height of 26 cm having an averge 9 primary and 11 secondary branches. It has shelling of 64 per cent and 44 gm per 100 kernels wt. It contains 50% oil in its kernels.
	Two identifiable and distinguishable morphological characteristics of the variety	(i) SG-84 is an erect growing having medium sized leaflets & pods. (ii) The pods have slight beak, medium constriction and smooth venation (iii) Pods have one to two kernels with light brown testa.
	Yield :	
	Commercial product	—
	Av. seed yield	2062 kg/ha.

15.	Crop	Groundnut	
	Variety	TG. 3	
	Parentage	Mutant from spanish improved developed at BARC, Trombay.	
	Breeder/Institute responsible for maintaining the breeder's stock.	(1) Agril. Division BARC, Trombay. (2) Department of Plant Breeding, College of Agriculture, Vellayani.	
	Description of the variety	(1) Habit	Bunch
		(2) Stature	Semitall
		(3) Stem :	
		Pigmentation	No
		Haieyness	Pubescent
		Branching	Early
		No. of branches	7.7
		(4) Leaf :	
		Petiole length	Medium
		Petiole pigmentation	No
		Stipules	Present
		Colour	Green
		Shape	Ovate
		Size	Medium

(5) Flowering : Profuse
(6) Days to 50% flowering : 28.5
(7) Flowers
    Colour : Yellow
    Size : Medium
(8) Aerial pegging : low
(9) Peg colour : No
(10) Pod burial : Shallow
(11) Days to maturity : 107.7
(12) Pods :
    Mature pods/plant : 19.1
    Immature pods/plant : 4.3
    Maturity : Synchronous
    Filling : Good
    Construction : Shallow
    Reticulation : Parallel
    Size : medium
    Shape : beaked
(13) 100 pod weight (g) : 141.5
(14) 100 kernel weight (g) : 56.6
(15) Kernel
    Number per pod : 1.9
    Size : medium
    Testa colour : flesh
(16) Shelling percentage : 74.5
(17) Oil content (%) : 48.5
(18) Protein content (%) : 24.5
(19) Seed dormancy : Non dormant
(20) Pod yield (kg/ha)
    (a) Kharif uplands : 2880
    (b) Summer Rice fallows : 2745
(21) Haulms yield (Kg/ha)
    (a) Kharif uplands : 15021
    (b) Summer Rice Fallows : 10921

Two indentifiable distinguishable morphological characteristics of the variety : (1) Bunch type
(2) Kernal testa : flesh coloured
(3) Beaked and medium sized pods

Yield : (Kg/ha)
(a) Commercial produce (Dry pods)
    Kharif uplands : 2880
    Summer rice fallows : 2745
(b) Kharif uplands : 15021
    Summer rice fallows : 10921

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16. Crop : Gingelly
Variety : TMV-3
Parentage : Hybrid derivative from South Arcot local and Malabar
Breeder/Institute responsible for maintaining the breeder's stock. : Oilseeds Research Station, Tindivanam (PO), South Arcot Dist., Pin Code 604 002
Description of the variety : Plants bushy, profusely branched, height 60 to 90 cm, stem light purple at the base. Leaves simple dark green, bottom leaves divided mostly three lobed. Leaves higher up on the stem are lanceolate and linear. Flower medium sized, bell shaped the outer surface being covered with short hairs. Corolla white with a purple lip and a bright yellow crescent capsule four loculed.
Two identifiable and distinguishable morphological characteristics of the variety :
(1) Plants bushy, profusely branched.
(2) Leaves simple dark green bottom leaves divided mostly three lobed leaves higher up are lanceolate and linear.
(3) Corolla bell shaped with outer surface being covered with short hairs.
(4) Seeds dark brown to black in colour.

Yield :	*Rainfed*	*Irrigated*
(a) Commercial	350 to 400	700 to 750
(b) Seed	Kg/ha.	Kg/ha.

17.	Crop	**Linseed (*Linum usitatissimum* L.)**
	Variety	**Lexmi-27 (LMH-27)**
	Parentage	**Neelum/kp1/Neelum/NP (RR 9//Neelum)/ R1″ Neelum/Afg. 8.**
	Breeder/Institute responsible for maintaining breeder's stock	**Senior Scientist (Oilseeds), C.S. Azad University of Agriculture and Technology, Kanpur-208002.**
	Description of variety/hybrid	**Plant medium dwarf, branched from mid of the stem, leaves are wide, thick and parrot green in colour, flower colour blue, seed brown, medium in the size. It is recommended for both rainfed as well as irrigated conditions of Bundelkhand tract to Uttar Pradesh.**
	Two identifiable distinguishable morphological characteristics of the variety	(1) **Plant open type.** (2) **Leaves broad, thick and Parrot green in colour.** (3) Flower colour blue
	***Yield* :**	
	(a) Commercial product	**Irrigated : 16-18 q/ha seed yield**
	(b) Seed	**Rainfed : 10.12/q/ha seed yield**

18.	Crop	**Millet (*Panicum Milliare* Kutki)**
	Variety	**Jawahar Kutki-2**
	Parentage	**Selection from local material named Gariyaband.**
	Breeder/Institute responsible for maintaining breeder's stock	**Professor & Head, Deptt. of Plant Breeding & Genetics, JNKVV, Jabalpur Millet Research Centre, Dindori.**
	Description of the variety	**This variety matures in 75 to 80 days plants of this variety are green in Colour and determinate in habit. The leaf blade is caspidate in shape. Seeds are pale yellow to light brown.**
	Two identifiable and distinguishable morphological characteristics of the variety	**Seed are pale yellow to light brown in colour. Plants are green in colour. The mature panicles are brown.**
	***Yield* :**	
	Commercial product Seed	**700 kg. to 1000 kg/ha. grain or seed.**

19.	Crop	**Moong or Mungbean (*Vigna radiata* L Wilczec.)**
	Variety	**ML 267**
	Parentage	**ML 1 × L No. 987**
	Breeder/Institute responsible for maintaining the breeder's stock	**Department of Plant Breeding, PAU, Ludhiana-141004.**
	Description of the Variety	**High resistance to Mungbean Yellow Mosaic Virus (MYMV). Plants are shorter, erect and deteminate. Its stem and branches are hairy with a light stem & a tinge of purple colour. Pods are borne on tops of all branches.**
	Two identifiable and distinguishable morphological characteristics of the variety	**(i) Hairiness of stem and broad.** **(ii) Slight tinge of purple colour.**
	***Yield* :**	
	Commercial product	—
	Seed	**580 kgs/acre or 1450 kgs/ha.**

20.	Crop	**Pea (Field Pea) *Pisum Sativam* L. Arvense (Poir)**
	Variety	**RPG-3 (Grain Type)**
	Parentage	**Single plant selection from local bulk (A-67), Bharatpur Distt. (1967-68).**
	Breeder/Institute responsible for maintaining the breeder's stock	**Sr. Pulse Breeder (Navgaon)/A.E.B. A.R.S. Durgapura, Jaipur (Reg.)**
	Description of the Variety/hybrid	**Plants tall with high pods bearing habit, plant type moderately open, less internode space with high yield and high protein content (24.2%) and high seed index with good seed lusture, shows resistant to powdery mildew disease under conditions, fair nodulation.**
	Two identifiable and distinguishable morphological characteristics of the variety	**7 seed per pod, plant type moderately open and pod index better than T-163**
	***Yield* :**	
	(a) Commercial product	**22.25 qtls/ha.**
	(b) Seed	**17.5% higher yield over T-163.**

21.	Crop	**Peas (*pisum sativum* L.)**
	Variety	**JP 179**
	Parenatge	**A triple cross** **Parents : (1) Local Brown barris** **(2) Powdery mildew resistant line 6588-1** **(3) Mutant 46 C**

Breeder/Institute responsible for maintaining breeder's seed stock.	:	Economic Botanist, Department of Plant Breeding & Genetics, JNKVV., Jabalpur.
Description of variety/hybrid :		
(1) Seed	.	Round, brown slightly mottled, 100 seed weight of 10 to 12g.
(2) Flowering node	:	11 to 12
(3) Days to flowering	:	55 to 60
(4) Flower colour	:	Purple
(5) Flowers per axil	:	1 to 2
(6) Flower size	:	Small
(7) Height at maturity	:	0.90 to 1.40 m
(8) Leaves	:	**Small size that** of local batris
(9) Pods	:	Small, 6 to 7 ovules per pod.
(10) Yield	:	Upland 15 Q/ha, Utera 8 to 10 Q/ha.
Two identifiable and distinguishable morphological characteristics of the variety	:	(1) Powdery mildew resistant. (2) Brown round seeds. (3) Purple flowers 1.2,axil.
Yield :		
Seed	:	12-15 q/ha.

22.	Crop	:	Paddy (*orzya sativa* L.)
	Variety	:	Jawahar Dhan-75
	Parentage	:	(IR20 × Laloo 14- × NS J25.
	Breeder/Institute responsible for maintaining the breeder's stock	:	Department of Plant Breeding & Genetics, JNKVV, Jabalpur.
	Description of the variety/hybrid	:	Dwarf statured extra early variety of less than 80 days duration. It is an ideal variety for drought prone areas as well as for double cropping.
	Two identifiable and distinguishable morphological characteristics of the variety	:	(1) Entire plant is green (2) Glume is straw colour while husk colour is whitish
	Yield ;		
	Commercial product	:	3500 kg/ha
	Seed	:	3000 kg/ha

23.	Crop	:	Paddy (*oryza sativa* L.)
	Variety	:	PR-108
	Parentage	:	Single plant selection from line RP 825-24-7 (Vijaya/PTB21 and designated as RP 825-24-7-1)
	Breeder/Institute responsible for maintaining the breeder's stock.	:	Punjab Agricultural University, Ludhiana.
	Description of the variety/hybrid	:	It is a short statured and stiff strawed variety. Its grains are long, slender and translucent. It takes 140-145 days from seed to seed.
	Two identifiable and distinguishable morphological characteristics of the variety.	:	(a) A dwarf variety with average plant height 105 cm. (b) The leaves are broader than PR 106. (c) Foliage lighter in colour as compared to PR 106. (d) Grains are awnless.
	Yield :		
	(a) Commercial product	:	6625 kg paddy per hectare.
	(b) Seed	:	

24.	Crop	:	Paddy
	Variety	:	K.M.D.P. 1 (Avinash)
	Parentage	:	Selection of I.R.T.P. at Mandya.
	Breeder/Institute responsible for maintaining breeder's stock	:	Junior Rice Breeder, Agricultural Research Station, Mugad, Distt. Dharwad.
	Description of variety/hybrid (in case of hybrid please give separate description of parents)	:	It is a medium variety growing to a height of 95 to 100 cms. with green stem, coarse little flat grains, short pointed awns.
	Two identifiable and distinguishable morphological Characteristics of the variety	:	Plant height is 95 to 100 cms. with medium thick stem, broad leaves, flag leaf erect long panicle with coarse little flat grains, short pointed awns with straw coloured husk.
	Yield :		
	(a) Commercial product	:	38 to 40 quintals/ha.
	(b) Seed	:	—
	(c) Fodder	:	40 to 42 quintals/ha.

25. Crop : Paddy
Variety : K.M.D.P. 2 (Abhilash)
Parentage : CR-63-5218-1 × Pankaj
Breeder/Institute responsible for maintaining breeder's stock : Junior Rice Breeder, Agril. Research Station, Mugad, Distt. Dharwad.
Description of variety/hybrid (in case of hybrid please give separate description of the parents) : It is medium tall variety growing to the height of 105-110 cms. with coarse bold grains long panicle.
Two identifiable and distinguishable morphological characteristics of the variety : Plant height: 105-110 cms, Thick pinkish colour stem, erect leaves, coarse grain with straw coloured husk.

Yield:
(a) Commercial product (grain) : 35-40 quintals/ha.
(b) Seed : —
(c) Fodder : 42-45 quintals/ha.

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26. Crop : Paddy
Variety : Vajram
Parentage : Sowbhgya/ARC 6650
Breeder/Institute responsible for maintaining breeder's stock : Agricultural Research Station, Maruteru.
Description of variety/hybrid (In case of hybrid please give separate description of the parents) :
Cultural adaptability : Wetland
Crop Season : Kharif
Duration : 150 days
Height : 100 cms.
Habit of growth : Erect
Leaves : Medium
Hairiness : glabrous surface
Boot leaf : Erect
Leaf sheath colour : Green
Leaf blade : Green
Leaf juncture : Green
Internode : Green
Nodes : Green
Auricle : Green
Peduncle : Green
Panicle type : Compact
Panicle length : Medium
Awns : Awnless
Kernal shape : Medium slender
Hairiness on the grain : Very light
Hull : Light brown glume
Apiculus : Pigmented
Awn colour : Awnless
Empty glumes : Light brown
Stigma : Green
Kernal colour : White

Two identifiable and distinguishable morphological characters of the variety :
(i) Semi-dwarf in heigh (100 cm)
(ii) Medium slender grain with light brown glumes.

Yield :
(a) Commercial product : 6 t/ha Straw
(b) Seed : 6 t/ha Seed

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27. Crop : Paddy
Variety : Pratibha
Parentage : Sowbhagya/ARC 6650
Breeder/Institute responsible for maintaining breeder's stock : Agricultural Research Station, Maruteru.
Description of variety hybrid (In case of hybrid please give separate description of the parents) :
Cultural adaptability : Wetland
Crop season : Kharif
Duration : 165 days
Height : 115 cm.

Habit of growth : Erect
Leaves : Medium
Hairiness : Glabrous surface
Boot leaf : Erect
Leaf sheath colour : Green
Leaf blade : Green
Leaf juncture : Green
Internode : Green
Nodes : Green
Auricle : Green
Panicle type : Compact
Panicle length : Medium
Awns : Awnless
Kernal shape : Long slender
Hairiness of the grain : Very light
Hull : Brown
Apiculous : Pigmented
Awn colour : Awnless
Empty glumes : Brown
Stigma : Green
Kernal colour : White

Two identifiable and distinguishable morphological characters of the variety : (i) Intermediate height (115 cm)
(ii) Long slender grain with deep brown glumes.

Yield :
(a) Commercial product : 6.5 t/ha straw
(b) Seed : 6.5 t/ha seed

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28. Crop : Paddy
Variety : Pothana
Parentage : IR 579 × WGL 12708
Breeder/Institute responsible for maintaining breeder's stock. : Agricultural Research Station, Warangal.
Description of variety/hybrid (in case of hybrid please give separate description of the parents) : Cultural adaptability : Wetland
Crop season : Late Kharif
Duration : 120-125 days
Height : 80 cms.
Habit of growth : Erect
Leaves : Medium
Hairiness : Glabrous surface
Boot leaf : Erect
Leaf sheath colour : Purple pigmented
Leaf blade : Light green purple margin
Leaf juncture : Purple
Internode : Purple
Nodes : Purple
Auricle : Purple
Peduncle : —
Panicle type : Compact
Panicle length : Medium
Awns : Awnless
Kernel shape : Long slender
Hairliness on the grain : Very light
Hull : Straw glume
Apiculus : Pigmented
Awn colour : Awnless
Empty glumes : Straw
Stigma : Green
Kernel colour : White

Two identifiable and distinguishable morphological characteristics of the variety	(i) Leaf sheath	Purple
	(ii) Apiculus	Purple
Yield :		
(a) Commercial product	5 t/ha Straw	
(b) Seed	5 t/ha Seed	

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29. Crop	Paddy	
Variety	Narendra 2 (**IET** 4555)	
Parentage	IR 8/Tadukan /TKM 62 TN/IR 24 0. nivara.	
Breeder/Institute responsible for maintaining breeder's stock.	Narendra Dev University of Agriculture and Technology, Faizabad.	
Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	Plant	Dwarf (90 cm) & erect.
	Tillering	Good (9/plant)
	Leaves	Green erect.
	Leaf senescence	Slow
	Panicle length	25 cm.
	50% flowering	85 to 90 days.
	90% maturity	112-115 days.
	(i) Bacterial leaf streak	Moderately resistant
	(ii) Helminthosporium	Moderately resistant
	(iii) Blast	Resistant
	(iv) Bacterial leaf blight	Moderately resistant
	Leaf and plant hopper	Resistant (green and Brown both)
	Stem borer Lodging	Moderately Resistant
	Shattering	Moderate threshability
	Fertilizer	80:40:40 NPK kg/ha.
	Suitability	For irrigated, early paddy growing areas under transplanted condition.
	Grain	Long and slender
	Kernel size :	
	Length	6.76
	Breadth	2.11 mm
	L.B. Ratio	3.20
	Kernel colour	White
	Abdomen white	Absent
	Hulling (%)	80
	Milling %	45
	H.R.R.	59.0
	Alkali value	500 × 400
	Protein (%)	7.7
	Water uptake at 82* C per 100 g 320	4.25
	Volume Expansion	
	Kernel length on cooking	8.20mm
	Kernel elongation ration	1.33
	Cooking quality	Good
Two identifiable and distinguishable morphological characteristics of the variety	(i) Short-tipped	
	(ii) Slightly dropping leaves.	
Yield	50 quintals/ha seed yield.	

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30. Crop	Paddy	
Varie	Narendra 80 (NDU/NDR-80)	
Parenta	N 22 × IR 36	
Breeder/Institute responsible for maintaining breeder's stock	Narendra Dev University of Agricultural and Technology, Faizabad.	
Description of variety/hybrid (in case of hybrid, please give separate description of the parents)	Semi-tall (100 cm.) erect and stiff.	
	Tillering	Moderate and highly synchronous type 7-9/plant culms.
	Leaves	Green erect
	Leaf senescence	Slow
	Panicle fully exserted taller than normal dwarf.	10-20 cm

50% flowering : 80-85 days
90% maturity : 110-112 days.
Blast : Resistant.
bacterial : Moderately resistant
Brown spot
Leaf spot : Moderately resistant
Rice Tungro Virus (RTV) : Resistant
Sheath Blight : Resistant.
Leaf : Moderately resistant.
Stem borer : Resistant.
Gall Midge : Moderately resistant
Lodging : Resistant
Drought : Suitable for irrigated areas.
Shattering : Moderate threshability
Fertilizer : 80:40-40 NPK Kg/ha.
Suitability : For irrigated short duration paddy growing areas under transplanted as well as direct sown irrigated areas.
Grain : Long slender.
Kernel size : Length : 6.70 mm
Breadth : 2.17 mm
Kernel colour : White
L.B. Ratio : 3.41
Abdomen white : Absent.
Hulling% : 80.0
Milling% : 73.2
Head Rice recovery : 59.6%
Alkali value : 7.0 × 6.0
Protein : 9.16
Water uptake - at 82*C per 100 gm. : 400 ml.
Volume Expansion : 5.5
Kernel length on cooking : 10.4
Cooking quality : Good

Two identifiable and distinguishable morphological characteristics of the variety : Semi tall (100 cm.), Long panicle, Long ligule and Short deciduous auricle.

Yield :
(a) Commercial product : 50 quintals/ha
(b) Seed :

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31. Crop : Ricebean
Variety : RBL-1
Parentage : Ricebean variety RBL 1 has originated from a single plant collection made from the fields of mungbean from Dist. Magour in Rajasthan in the year 1976. Plant progenies were raised from 1977 to 1979 and reselections were made for uniformity of seed colour and other agronomic characters. One such promising collection was designated in 1980 as RBL 1.

Breeder/Institute responsible for maintaining breeder's stock : Department of Plant Breeding, Punjab Agricultural University, Ludhiana 141 004.

Description of the variety/hybrid (in case of hybrid, please give separate description of the parents) : Variety is photosensitive and spreading with many lateral inter-twining banches and vigorous plant growth. Flowering and pod formation is profuse and uniform. It matures synchronously in 125-135 days and vacates field in the last week of November. Its grains are oblong, large, smooth and light green coloured, containing 20 per cent protein content having 100 seed weight as 5 g., possessing good culinary properties, agreeable taste and without any hard grains.

Two identifiable and distinguishable morphological characteristics of the variety :
(a) *Plant type ;* Photosensitive, indeterminate, spreading and highly resistant to virus disease.
(b) *Stem* : Light green, grooved, covered with short fine white hair.
(c) *Leaf* : Trifoliolate, leaflet 6-9 cm long; petioles 5-10 cm. long; stipules conspicuous ovate lanceolate.
(d) *Flower* : Papilionaceous, bright yellow.

(e) *Pod*: Green 10 to 12 cm. long and 4-6 cm. broad, turns fawn on maturity

(g) *Seed* : Light green colour with smooth seed coat oblong; average 100 seed wt. 5 g. and resistant to store grain insect-pest.

Yield ;

(a) Commercial product : —

(b) Seed : 1700 kg/ha.

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32. Crop : Sorghum (*Sorghum vulgare L*).

Variety : Proposed name Gujarat Jowar-37.

Parentage : This variety is developed through hybridisation (2077 × M 28) × Cuandri.

Breeder/Institute responsible for maintaining breeder's stock : Research Scientists (Sorghum), All India Coordinated Sorghum Improvement Project, GAU, Surat.

Description of variety/hybrid (in case of hybrid please give separate description of the parents) : The new variety is better in yielding potentiality both for fodder and grain along with tolerance to major diseases and pests. The seeds are pearly white and medium in size. It is medium tall and medium early maturing variety. It is resistant to grain mold and shootfly. Earhead of the variety is medium long and compact. Stem is thin and narrow with dark green leaves.

Two identifiable and distinguishable morphological characteristics of the variety : Earhead is compact. Leaves are dark green and narrow. Seed colour is pearly white and covered halfway by glume. Plant colour is tan. It is high yielding variety and on an average has given 40.54% higher grain yield than GJ-108 under large scale testing in the state.

Yield :

(a) Grain yield : 2923 kg/ha.

(b) Fodder yield : 8323 kg/ha.

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33. Crop : Safflower

Variety : Jawahar Safflower-1

Parentage : IC 11839

Breeder/Institute responsible for maintaining Breeder's stock : Scientist (Plant Breeding), Safflower Research Project, College of Agriculture, Indore (M.P.).

Description of variety/hybrid (in case of hybrid please give separate description of parents) :

Growth habit : Bushy
Plant height (cm) : 85-90
No. of branches (Primary) : 10-15
Angle of branching : About 40°
Length of branches : Medium to long, about 40-50 cms.
Shape of upper leaves : Ovate
Margin of upper leaves : Serrate
Length of leaves : 9.5 cm.
Breadth of leaves : 3.6 cm.
Colour of leaves : Yellow at drying
Flower colour : White
Number of heads : 25-30
Diameter of head : 2.5 cm.
Length of bract : 3.3 cm.
Breadth of bract : 1.1 cm.
Size of spines on bract : Medium
Number of Spines : Many on bract
Location of Spines on bract : Tip and a long margin
Colour of the grain : White
1000 grain weight : 65-70 cms.
Days to maturity : 145 days

Two identifiable and distinguishable morphological characteristics of the variety : Spinning Variety with white flowers

Yield:

(a) Commercial product (oil) Oil Yield : 30% oil in seed 450 kg./ha.

(b) Seed : 15 quintals/ha.

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34. Crop : Soyabean (*Glycine max* (i) Merr)

Variety : Jawahar Soyabean JS 75-46

Parentage : Improved pelican × semmes (exotic × exotics)

Breeders/institute responsible for maintaining breeder's stock : Nucleus Seed Unit, Deptt. of Plant Breeding & Genetics, JNKVV, Jabalpur (M.P.) 482 004.

Desctiption of variety/hybrid (in case of hybrid please give separate description of the parents) : The plants are indeterminate and tall (65 cm) with fewer mostly 2 to 3 branches per plant. Flower are purple and takes 43-46 days to 50 plant flowering See dling are marked purple pigment after emergence, Leaves are intermediae to long and green in colour. The pod, stem and branches are covered with dense gray pubescence. The pods are invariability born on the stem. Average maturity - 105 days, Seeds are yellow, medium small and shinning (11.0 - 15 g./100 seeds) with pink hilum colour. Highly resistant to pod shattering even after attaining complete maturity.

Two identifiable and distinguishable morphological characteristics of variety : Plants indeterminate tall and at maturity plants are covered with gray pubescence colour. Seeds are medium small, shining with pink hilum colour.

Yields :

Range : 16.5 to 31 q/ha.

Average : 24.5 q/ha. (giving 11% higher over Gaurwa)

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35. Crop : Soyabean (*Glycire Max* L.)

Variety : SL 96

Parentage : Bataota × J.S. 3

Breeder/Institute responsible for maintaining breeder's stock : Department of Plant Breeding, Punjab Agril. University, Ludhiana - 141 004.

Description of the variety : Semi dwarf, strong stemmed, white flowered with brown pubescence; bold light cream coloured grains.

Two identifiable and distinguishable morphological characteristics of the variety : White flowers, Brown pubescence and bold cream coloured grains and black hilum.

Yield:

Commercial product : —

Seed : 1800 kg/hectare

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36. Crop : Tomato

Variety : Punjab NR-7

Parentage : S-12 × NMR-1

Breeder/Institute responsible for maintaining the breeder's stock : Vegetable Breeder, Deptt. of Vegetable Crops, Landscaping & Floriculture, PAU, Ludhiana.

Description of the variety : Plants determinate, foliage—medium dense, fruits medium size, flat round uniformly coloured, resistant to root knot nematodes.

Two identifiable and distinguishable morphological characteristics of the variety : (1) Growth habit - determinate

(2) Fruits flat round, free from green stem and condition

(3) Resistant to root-knot nematodes

Yield ;

Commercial product : 419 qtls/ha.

Seed : 160 kg/ha.

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37. Crop : Toria (*Brassica campestris* var toria)

Variety : P.T. 30

Parentage : Polycross involving M-3 female and a number of lines as male parent

Breeder/Institute responsible for maintaining the breeder's stock : Oilseeds Breeder, GB Pant University of Agriculture & Tech., Pantnagar.

Description of the variety : P.T. 30 matures in around 93 days and attain a height of 115-150 m under good agronomic management conditions. Plants are waxy and have brigh yellow flowers. It has medium bold seeds of brown colour. Plants samlax. Fruiting is similar to T9, neither very compact (bunchy) nor sparse Leaves are lush green and non-anthocyanine pigmented.

Yield :

Commercial product : 15-20 qtls/ha.

Seed : 10-12 qtls/ha.

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38. Crop : Urid (*Vigna mungo* (L) Hepper)

Variety : Jawahar Urid-2 (ARU-2)

Parentage : T-9 × Rewa 1-1

Breeder/Institute responsible for maintaining the breeder's seed stock : Senior Scientist (Pulses), Main Pulse Research Centre, JNKVV - R.A.K. College of Agriculture, Sehore - 466 001 (M.P.).

Description of the variety : Short statured (dwarf) with main stem bearing habit, Plant height - 27 cm Dark green lanceolate leaves, 25 pods per plant, 6 seeds per pod, seeds are black, bold (3.7 g/100 seeds) and shining. maturity 65-70 days.

Two identifiable and distinguishable morphological characteristics of the variety : Plant dwarf with main stem bearing habit, No. of branching, seed are shining black and bold.

Yield :

Commercial product : —

Seed : 1000 - 1200 kg/ha.

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39. Crop : Urid (*Vigna mungo* (L). Hepper)

Variety : Jawahar urid-3 (Ju 77-41)

Parentage : (Mash 40 × T. 9) × (T. 9 × UPU-2)

Breeder/Institute responsible for maintaining the breeder's stock : Senior Scientist (Pulses), Main Pulse Research Centre, JNKVV - R.A.K College of Agriculture, Sehore - 466 001 (MP).

Description of the variety : Plants are 45 cm tall with 3-4 branches, 5-6 clusters per plant 25-30 pod per plant, 7 seeds per pod, 50% flowering in 38 days, maturity 70 days Seeds are black and bold (4.1 g/100 seeds).

Two identifiable and distinguishable morphological characteristics of the variety : Short (dwarf) plants, leaves broader and dark green, seeds are black and bolder than T. 9

Yield ;

Commercial product : —

Seed : Kharif : 1200-1500 kg/ha.
Summer : 700- 800 kg/ha.

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40. Crop : Urdbean/blackgram (*Vigna mungo* (L) Hepper)

Variety : Pant U-35

Parentage : UPU-3 × Pant U-19

Breeder/Institute responsible for maintaining the breeder's seed stock. : Urd and Moong Breeder, G.B. Pant University of Agriculture and Technology, Pantnagar - 263 145.

Description of the variety :
(i) Plant height : 100 cm
(ii) Maturity : 75-80 days
(iii) Plant habit : Erect
(iv) Colour of stem and foliage : Green
(v) Pod characters Ripe pod : Unripe pod-green black with 7.0 seeds/pod
(vi) Seed characters : Black seeds with 40 g of 1000 seed weight

Two identifiable and distinguishable morphological characteristics of the variety :
(i) Purplish pigmentation on stem and petiole
(ii) More dense pubescence on pods

Yield :

Commercial product : 10-12 q/ha.

Seed : 10-12 q/ha.

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41. Crop : White Clover (*Trifolium repons*)

Variety : Palampur Composite-1

Parentage : S-100 no mark, lodigino mother, Irrigation, merit, oregon and local strains.

Breeder/Institute responsible for maintaining the breeder's stock : Forage Breeder, Department of Plant Breeding, HPKVV, Palampur-176 062 (H.P.).

Description of the variety : It is a fast growing Pasture Legume, has comparative breeder leaf, long leaf petiole, vigorous growth habit better regeneration capacity, and high crude protein in herbage (23%) on dry matter basis.

Two identifiable and distinguishable morphological characteristics of the variety :
(1) Leaves are broad with long petiole.
(2) Flower head is large, compact and white at early stage and turns pink toward maturity.
(3) Seeds are bright yellow in colour.

Yield :

Commercial product : On an average 500-700 q of fresh forage yield/ha/year in 3-4 cuttings have been obtained.

Seeds : 100/ha.

43. Crop : Gram (*Cicer arietinum* L.)

Variety : Avarodhi

Parentage : T.3 × K.315

Description of the variety :

(1) Plant height : 60-70 cm.

(2) Stem & Foliage distinct : Foliage dark green

(3) Distinct fruit characters : Pods mostly double seeded

(4) Distinct seed characters : Seeds brown, medium bold (190 Gm./1000 seeds)

Two identifiable and distinguishable morphological characters. : (i) Wilt resistant against Fusarium Oxysporum f. Ciceri.
(ii) Medium tall, Semi-spreading

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44 *Crop* : *Bajra* - Pearl millet (*Pennisetum typhoides* (Bl) *S H*)

Variety : *GHB*-30

Parentage : Female : MS 5054 ×
Male : J 2002

Breeder/Institute responsible for maintaining Breeder's stock. : Research Scientist (Millets), Millet Research Station, Gujarat Agril. University, Jamnagar - 361 006.

Description of the variety and two morphological characters. : Bajra Hybrid GHB-30 is coming from cross combination of MS 5054A × J 2002. GHB-30 has very high degree of downy mildew resistance as compared to existing widely cultivated popular hybrids like BJ-104 and CJ-104. The ear-heads are hard and compact and the crop is having desirable height with early maturity.

(1) Height : 158 cms

(2) Days to maturity : 78 days

(3) Number of effective tillers : 4

(4) 1000 grain wt. : 6.66 gms.

(5) Medium long tapering at end earhead compact at maturity

(6) Thin stem.

The characters of the parents of GHB-30 are as under :

Characters	*MS 5054A*	*J* 2002
(1) Plant height (cms)	96	65
(2) No. of effective tillers	3.70	2.78
(3) Days to anthesis	50.26	53.55
(4) Ear length (cm)	17.14	15.34
(5) 1000 grain wt. (gm)	5.00	5.66

सत्यमेव जयते

Proceedings of the Eighth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 13th July, 1987 under the Chairmanship of Dy. Director-General (CS), ICAR

The list of participants is appended as at Annexure I.

2. The Chairman welcomed that Members and stated that rapid and radical changes are taking place in the existing system of evolution and evaluation of the varieties. Large number of private seed companies are also showing their interest in this area and they have recently introduced new varieties of various important crops for production and marketing of the seeds of these varieties in a sizeable quantity. However, majority of these varieties are not tested under coordinated trials and, thus, it is very difficult to assess their real worth. He further mentioned that at the same time large number of varieties are being bred by public institutions and being released and notified every year. Unfortunately, most of them do not reach the field and farmers are not even aware of their existence. Such a situation defeats the very purpose of release besides creating problems for production of quality seeds and maintenance of their original form etc. Therefore, he suggested that this Committee should view the release proposals from this angle before according its approval either for release or for notification. This would go a long way in bringing about same order and discipline into the seed production and marketing processes in general and systematising the research process so as to avoid wasteful efforts.

3. The Committee recommended the following to improve the existing system:

(i) There should be a provision for denotification of old and obsolete varieties;

(ii) All the Project Directors/Coordinators should be requested to review the list of released and notified varieties of the various crops and to identify the varieties which have become obsolete and highly susceptible to diseases and pests. The list of these varieties should either be discussed in the Workshop or in a special meeting convened for this purpose. The identified list of such varieties might be submitted to the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for denotification;

(iii) There should be a uniform policy for release and notification of the varieties so that varieties bred by private seed companies and multinationals are also subjected to same scientific discipline and national policy;

(iv) The sponsoring authority at the time of the submission of the proposal should forward the views of the Project Director/Coordinator alongwith the proposal so that the recommendations of the Workshop indicated in the proposal is authenticated;

(v) The Secretariat of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties should examine the proposal after their receipt and if proposals are found suffering from any defect(s), the same should be brought to the notice of the Chairman of the Committee and incomplete proposals should not be included in the Agenda Notes. The sponsoring authority should be informed to resubmit the proposal after removing the defects identified by the Secretariat.

(vi) The Committee recommended that possibilities may be explored to include the seeds of the plantation crops, medicinal, narcotics, aromatic plants and condiments under Seeds Act through appropriate amendments.

4. After this, the regular agenda items were taken up for discussion and the position in respect of each item is indicated below:—

Item No. 1: Confirmation of the minutes of the Seventh Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 11th December, 1986.

The minutes of the earlier Meeting were confirmed.

Item No. 2: Review of action taken on the minutes of the Seventh meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

The position indicated in the Agenda Notes was noted by the Sub-Committee/participants.

Item No. 3: Consideration of the proposals for Release

42 proposals of various varieties of different crops were considered for Release and Notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated as hereunder:

(i) Details of the varieties recommended for Release and Notification. Varieties mentioned at Sl. No. 2 to 5 could not be recommended for notification as Coconut is not covered under the Seeds Act. The area of cultivation is also indicated against each variety.

Sl.No.	Crop	Variety	Remarks
1	2	3	4
1.	Barley	Kedar (DL-36)	(i) Recommended for release for cultivation in irrigated areas of North Eastern Plains Zone (Uttar Pradesh, Bihar, West Bengal). (ii) The variety has already been notified vide S.O. 295(E) dated 9-4-85.

1	2	3	4
2.	Coconut	PHC-1 (Pilicode Hybrid Coconut-1)	Recommended for Release for cultivation in all the 5 agroclimatic zones of the state of Kerala.
3.	Coconut	Chandra Kalpa	Recommended for Release for cultivation in all soil types under rainfed conditions in Tamil Nadu, Andhra Pradesh, Kerala, Karnataka and Maharashtra.
4.	Coconut	Chandra Sangara (D × T)	Recommended for Release for cultivation in all soil types suitable for coconut in Kerala.
5.	Coconut	Chandra Laksha	Recommended for Release for cultivation in all soil types suitable for coconut growing in Kerala and also in drought prone areas.
6.	Cotton	Savita (H. 712)	Recommended for Release for cultivation in Southern States of Tamilnadu and Coastal Andhra Pradesh.
7.	Cassava/tapioca	Sree Prakash (S-856)	Recommended for Release for cultivation in Kerala State.
8.	Taro (*Colocasia esculenta*)	Sree Rashmi	(i) Recommended for Release for cultivation in Kerala State. (ii) The Project Coordinator on Tuber crops may kindly also test the variety in other important Taro growing areas of the country and communicate the results to Deptt. of Agri. of the concerned State U/T.
9.	Dinanath grass	Bundel-1	Recommended for Release for cultivation in the entire country.
10.	Forage sorghum	Haryana Chari-260	Recommended for Release for cultivation in the sorghum growing areas of the country.
11.	Forage Sorghum	Haryana Chari-171	Recommended for Release for cultivation in sorghum growing areas of India where soil is sandy loam to loam and assured irrigation facilities are available.
12.	Greater yam	Sree Keerthi	(i) Recommended for Release for cultivation in Kerala State. (ii) The sponsoring authority would indicate in detail the parentage of the variety.
13.	Little millet (*Panicum miliare* Lamk.)	Jawahar Kutki-8	Recommended for Release for cultivation in Madhya Pradesh, Orissa, Gujarat, Maharashtra and Andhra Pradesh.
14.	Linseed	Gaurav	Recommended for Release for cultivation in Linseed growing areas of Bihar, West Bengal, Assam and Uttar Pradesh excluding Bundel-Khand.
15.	Mungbean	Pusa-105	Recommended for Release for cultivation in Central and Northern Plains, West Zones consisting of States of Madhya Pradesh, Gujarat, Andhra Pradesh, Karnataka, Maharashtra, Rajasthan, Haryana, West U.P., Orissa etc.
16.	Mungbean	PDM-11	Recommended for Release for cultivation in Central Zone (Gujarat, Maharashtra, M.P., Part of S.E. Rajasthan and Bundelkhand etc.).
17.	Mungbean	PDM-54	Recommended for Release for cultivation in North eastern plain zone (Eastern U.P. and West Bihar).
18.	Rajmash (Frenchbean)	Uday	Recommended for Release for cultivation in North Eastern plain zones (NEPZ) which includes central and eastern part of Uttar Pradesh and Bihar State. (*Rabi* season : mid Oct. to mid Nov.).
19.	Soybean	Pusa-16	Recommended for Release for cultivation in Northern plains of India, Northern Hill Zone including North Eastern Hill complex and parts of Madhya Pradesh. It is also suitable for Rabi cultivation in West Bengal.
20.	Soybean	Pusa-24	Recommended for Release for cultivation in Northern plain S. Zone comprising Punjab, Haryana, Rajasthan, Uttar Pradesh, Bihar, West Bengal and Assam, Northern Hill Zone including North-Eastern Hill complex and parts of Madhya Pradesh, particularly areas surrounding Jabalpur, Betul and Indore.
21.	Sunflower	MSFH-8	Recommended for Release for cultivation in the whole of India (all Sunflower growing areas).
22.	Sweet Potato	Samrat (S-30)	Recommended for Release for cultivation in Andhra Pradesh, Kerala, Bihar, Maharashtra, Tamil Nadu and Karnataka.
23.	Sweet Potato	Sree Vardhini	Recommended for Release for cultivation in Kerala State.
24.	Hybrid Bajra	Pusa-23	Recommended for Release for cultivation in all the bajra growing States.

The detail of the important features of the above varieties is given in Annexure II.

(ii) Details of the varieties which could not be recommended for Release and Notification. The sponsoring authorities may kindly note the observations of the Committee and *resubmit the proposals* alongwith the necessary informations *wherever it is requested*

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Arecanut	VTL-17 (Sreemangala)	(i) The details of the variety used as check might be indicated. (ii) Whether the variety has been tested against Mangala and if so the yield difference. (iii) At Sl.No. 11 of the proposal VTL-11, it has been indicated that there is great demand for this variety. The graft may kindly be described. (iv) The reaction of the varieties against Koleroga (Phytophthora) might be indicated.
2.	Arecanut	VTL-11 (Sumangala)	
3.	Arhar	ICPL-151	(i) The variety is not found superior to UPAS-120 even in Central Zone. (ii) Unstability in yield performance has been noticed which may be explained.
4.	Barley	DL-120	(i) The variety is not found superior to other varieties in respect of its yield potential.
5.	Taro	C-266	(i) The variety is not found superior in its yield performance in comparison to other varieties.
6.	Dinanath grass	IGFRI-4-2-1	(i) The variety is not found superior in its yield performance in comparison to Bundel-1 (IGFRI 43-1).
7.	Greater yam	Da-80	(i) Da-80 is not found superior to Da-60.
8.	(Kabli) gram	Gora Hissari	(i) The details of the performance of the variety under coordinated trials has not been forwarded. (ii) The data of the project coordinated trials and views of the Project Coordinator might be forwarded at the time of resubmission of the proposal.
9.	Oats	OL-9	(i) The variety is not found superior to kent.
10.	Paddy	BIET-1009	(i) The details of the performance of the variety under coordinated trials has not been forwarded. (ii) The data of the Project Coordinated trials and views of the Project Coordinator might be forwarded at the time of resubmission of the proposal.
11.	Sweet Potato	76-OP-217 (Sree Nandini)	(i) The variety is not found superior to samrat and Sree Vardhini.
12.	Sugarcane	CoJ-64	The varieties have not been tested under coordinated trials and are meant for release only for Haryana State and thus Haryana State Seed Sub-Committee could consider the proposal.
13.	Sugarcane	CoS-767	
14.	Safflower	APRR-3 (Sagar Muthyalu)	(i) The details of the performance of the variety under coordinated trials has not been forwarded. (ii) The data of the Project Coordinated trials and views of the Project Coordinator might be forwarded at the time of resubmission of the proposal.
15.	Turmeric	Selection PCT-8 (Suvarna)	The Sponsoring Authority might submit the detailed data on yield performance and disease reaction for consideration of the Chairman of the Committee. The Committee authorised the Chairman to take decision about the release of the variety based on its merits after obtaining additional information requested for.
16.	Wheat	CPAN-1922 (Himgiri)	The variety has not shown any added advantage in respect of yield and disease resistance in comparison to already released varieties.
17.	White Yam	U-195(2) (Sree Priya)	(i) Detailed data might be submitted. (ii) Parentage might be described in detail. (iii) Proposal might be resubmitted along with above information.
18.	White Yam	I-146	

Item No. 4: Consideration of the proposals for notification under Section 5 of the Seeds Act.

34 proposals of various varieties of different crops were considered for notification under Section 5 of the Seeds Act. The views/recommendations of the Committee is indicated against each proposal as under:—

(i) Details of the varieties recommended for Notification under Section 5 of the Seeds Act

Sl.No.	Crop	Variety
1.	Musk melon	Punjab Hybrid
2.	Paddy	Sabita
3.	Paddy	Pant Dhan-6
4.	Paddy	Jogen
5.	Rai	Bhagirathi (RW-351)
6.	Safflower	Nira
7.	Wheat	UP-1109 (Pant Wheat 1109)
8.	Wheat	BW-11 (Purbali)

Details of the Morphological characters etc.of the above varieties are given in Annexure III.

(ii) Details of the varieties not recommended for notification. The Sponsoring Authorities are advised to note the remarks given and resubmit the proposal alongwith desired information

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Bhindi	Punjab-7	(i) Views of the Project Coordinator about the variety might be obtained.
2.	Brinjal	ABV-1	(i) The proposal might be resubmitted alongwith the data of Project Coordinated trials.
3.	Cauliflower	Pant Gobbi-2	(i) The proposal might be resubmitted alongwith the data of Project Coordinated trials.
4.	Cotton	AKH-081	Do.
5.	Cotton	Sampada	Do.
6.	Groundnut	Dh-8	(i) The views of the Project Coordinator about the variety might be submitted.
7.	Gram	Anuradha	(i) The views of the Project Coordinator about the variety might be obtained.
8.	Horse gram	Deepali (HPK-6)	(i) The proposal might be resubmitted alongwith the data of the Project Coordinated trials.
9.	Jute	CUC-1	Do.
10.	Paddy	VDN-3-51-18 (Indryani)	Do.
11.	Paddy	SYE-ER (148-95)	Do.
12.	Paddy	Phuskala (RGL-2624)	Do.
13.	Paddy	Vamshi (RGL-1746)	Do.
14.	Paddy	Mahendra (RGL-1750)	Do.
15.	Paddy	Goa-1	Do.
16.	Paddy	Kiron (IET-3226)	Do.
17.	Paddy	Mandira	Do.
18.	Ragi	Pant Mandua-3 (PES-400)	Do.
19.	Rai	Sarama (RW-85-59)	(i) Views of the Project Coordinator might be submitted. (ii) The proposal might be resubmitted with the data of Project Coordinated trials.
20.	Safflower	Malviya Kusum-305	The date of Workshop indicated seems wrong hence clarification might be obtained from the Project Coordinator.
21.	Sesame	KDSC-1 (E-8)	The proposal might be submitted alongwith the views of Project Coordinator.
22.	Sesame	TAPI (JLT-7)	Views of the Project Coordinator might be submitted.

1	2	3	4
23.	Soybean	Gyalab	The proposal might be resubmitted alongwith the data of Project Coordinated trials.
24.	Tomato	Sonali (Selection-2)	The proposal might be resubmitted alongwith the data of Project Coordinated trials.
25.	Triticale	TL-1210	Views of the Project Director (Wheat) might be submitted.
26.	Toria	Panchali (TWC-3)	Views of the Project Director (oilseeds) might be submitted.

The Committee authorised the Chairman to decide the notification of the varieties mentioned at Sl. No. 1, 6, 7, 20, 22, 25 & 26 after receipt of the views of the Project Directors/Coordinators. Sponsoring Authorities are advised to submit the views of the Project Coordinator/Directors so that notification of varieties is decided at the earliest.

Item No. 5 : Labelling Standard for germination and purity of various seeds of notified kinds.

In view of the fact that the proposal would have for reaching implications on seed law enforcement and seed certification, the Committee recommended that it may be deferred for consideration later and meanwhile, the views of the State Governments on the provisions of notification as a kind might be obtained. Accordingly, the item was deferred.

Item No. 6 : Denotification of Varieties

The Central Sub-Committee on Crop Standards, Notification and Release of Varieties considered the recommendations of the Technical Group constituted by Central Seed Committee under the Chairmanship of Dr. P. V. Shenoi, Additional Secretary to the Govt. of India and approved its recommendations on denotification of the varieties. The following recommendations were also made:

Notification

(i) Introduction of the time bound notification of the varieties in future. The time limit would be kept to a maximum of 15 years for each variety; this does not preclude the withdrawal of the variety earlier than this, if it is not making any progress due to one or the other defects or succumbing to pests and diseases and any other justifiable reason such as genetic deterioration etc.

(ii) If the variety is found popular even after 15 years it would be further renotified for a period of five years.

Denotification

(i) The denotification proposals would be considered by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties only after ascertaining the views of the concerned states to which such varieties were released.

(ii) At the time of denotification, it should be ensured that alternate varieties are available to fill the gap created by denotified varieties.

Item No. 7 : Observations of Maha Balram, Project Coordinator, Barley with regard to the decision of the 7th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties pertaining to the release and notification of huskless barley varieties.

The matter was considered by the Committee and the Committee did not appreciate the way the Project Coordinator (Barley) has adopted to air his grievances. It was brought to the notice of the Committee that recently, Project Coordinator (Barley) has submitted the revised proposal of Karan-16 for release and notification. The Chairman informed that a special Committee was constituted by ICAR to examine the data pertaining to various huskless varieties developed by All India Coordinated Project on Barley and the Committee recommended that Karan-16 might be re-examined by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for release and notification.

The Central Sub-Committe on Crop Standards, Notification and Release of Varieties constituted a small group under the Chairmanship of DDG (CS), ICAR to re-examine the proposal of Karan-16. The other members identified for the Group are Dr. Munshi Singh, Head Division of Genetics, IARI, Shri I. S. Bist, Dy. Secretary to the Govt. of India, Dr. Venketeshwaralu, Additional Commissioner, Govt. of India, Shri N. S. Tunwar, Dy. Commissioner (Quality Control). Based as the recommendations of this Group variety Karan-16 may be released and the Sub-Committee might be informed of the action taken in its next meeting.

Item No. 8 : Additional information to be called for at the time of release and notification of Varieties

The Committee noted the views communicated by Dr. M. S. Swaminathan, Director General, International Rice Research Institute, Phillippines on the publication of 'Handbook on Cultivars' and expressed its gratitude to him for his keen interest in this publication brought out by the Central Seed Committee. The Committee approved the draft addendum to the proforma of release and notification proposed as per the Annexure 75. The copy of the Addendum of the proforma approved by the Committee is annexed as at Annexure IV. The Committee also suggested that the same might be circulated to all concerned so that, in future, the information might be supplied as per the column specified in the addendum to the proforma.

The Meeting ended with a Vote of Thanks to the Chair.

ANNEXURE I

List of the participants who have attended the 8th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held under the Chairmanship of DDG (CS), ICAR, on 13th July, 1987 in Krishi Bhavan, New Delhi

1.	Dr. C. Kempanna, Dy. Director General (CS), Indian Council of Agril. Research, Krishi Bhavan, New Delhi.	*Chairman*
2.	Dr. Ram Phal, Asstt. Director (Hort.) ICAR, Krishi Bhavan, New Delhi.	*Member*
3.	Dr. P.K. Agrawal, Head, Seed Science and Technology, IARI, New Delhi.	*Member*
4.	Dr. Munshi Singh, Head, Genetics Division, IARI, New Delhi.	*Member*
5.	Dr. M.M. Payak, Ex-Head, Division of Mycology & Plant Pathology, IARI, New Delhi.	*Member*
6.	Shri B.R. Barwale, Chairman and Managing Director, Maharashtra Hybrid Seeds Co., Jalna (Maharashtra).	*Member*
7.	Dr. Rajender Singh Tehlan, V & P.O. Dichaon Kalan, New Najafgarh, New Delhi.	*Member*
8.	Shri V.N. Puri, Paramjeet Ganj, Kapurthala, Punjab.	*Member*
9.	Sh. P. Manickavasagam, Director of Seed Certification, Coimbatore-641030 (TN).	*Member*
10.	Sh. Prem Singh Gill, Director, Punjab State Seed Certification Authority, Chandigarh.	*Member*
11.	Sh. J.N. Johri, Director, Rajasthan State Seed Certification Agency, Jaipur.	*Member*
12.	Shri H.S. Das, Director, Orissa State Seed Certification Agency, Bhubaneshwar.	*Member*
13.	Dr. M.P. Sinha, Director, Seed Certification, Bihar, Patna.	*Member*
14.	Sh. S. Venkat Reddy, Director, A.P. State Seed Certification Agency, Hyderabad.	*Member*
15.	Shri A.V. Torke, Director, Karnataka State Seed Certification Agency, Bangalore.	*Member*
16.	Shri R.R. Sharma, Director, U.P. State Seed Certification Agency, Lucknow.	*Member*
17.	Shri B.U. Modi, Director, Gujarat State Seeds Certification Agency, Ahmedabad.	*Member*
18.	Shri A.K. Sharma, Director, Assam State Seed Certification Agency, Guwahati-7.	*Member*
19.	Shri B.N. Sehgal, Jt. Director Agriculture/Chief Seed Certification Officer, Seed Certification Agency, Delhi Admn., Delhi.	*Member*
20.	Dr. R. Seetharaman, Director, Central Rice Research Institute, Cuttack, Orissa.	*Member*
21.	Shri K.G. Roy, Chief Seed Certification Officer, West Bengal State Seed Certification Agency, Calcutta.	*Member*
22.	Sh. I.S. Bist, Dy. Secretary (Seeds), Ministry of Agriculture, Deptt. of Agri. & Cooperation, Krishi Bhavan, New Delhi.	*Member-Secretary*

ANNEXURE II

The important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Eighth Meeting held on 13-7-1987

Crop : Barley (*Hordeum vulgare*)
Variety : Kedar (DL-36)
Sponsored by : Director, Indian Agricultural Research Institute, New Delhi-12.
Parentage with details of its pedigree : BG1 × K71
Description of variety : This variety possesses medium bold grains and relatively better straw strength

(a) Plant height : 90-100 cm (Medium tall)

(b) *Distinguishing morphological characters* :
- (i) Early growth habit : Erect growth
- (ii) Tillering capacity : Heavy tillering
- (iii) Colour of foliage and stem : Dark green
- (iv) Ear shape : Parallel
- (v) Ear density : Medium lax
- (vi) Awning : Smooth
- (vii) Glume colour : White
- (viii) Glume hairiness : Smooth
- (ix) Awn colour : White
- (x) Fragidity of rachis : Tough
- (xi) Threshibility : Easy
- (xii) Grain colour : White
- (xiii) Grain texture : Hulled slightly wrinkled
- (xiv) Grain size : Med. Bold (1000 kernel wt. 36-42 gms).

(c) Maturity (range in number of days) : Medium early
- (i) Days to flowering : (a) Timely sown - 75-80
  (b) Late sown - 65-70
- (ii) Days to Maturity : (a) Timely sown - 110-120
  (b) Late sown - 95-105

Agency responsible for maintaining Breeder's stock : Barley Breeder, Division of Genetics' IARI, New Delhi.

Crop : Coconut (*Cocos nucifera* L.)
Variety : PHC-1 (Pilicode Hybrid Coconut-1)
Sponsored by : Kerala Agricultural University, Vellanikkara, Trichur, Kerala.
Parentage : Lakshadweep Ordinary (L.O.) as female parent and Gangabondam (G.B) as male parent.

Description of the variety :
- (a) Habit : Tall
- (b) Average number of functioning leaves on the crown : 31 per palm
- (c) Age at first flowering : 5 years under rainfed conditions.
- (d) Annual production of female flowers : 304 per palm
- (e) Mean nut yield per annum : 108 per palm
- (f) Highest yield recorded per annum : 175 per palm
- (g) Mean weight of nut : 677 g
- (h) Mean weight of husked nut : 380 g
- (i) Mean weight of copra : 194-5 g per nut
- (j) Mean copra yield : 24.64 kg per palm per year.

Reaction to pests and diseases : This hybrid reacts to the pest and diseases like any other coconut variety and cannot be said to be resistant for any particular malady.

Agency responsible for production of LO × GB hybrids :
- (i) Regional Agril. Research Station, Pilicode.
- (ii) Central Plantation Crops Research Institute, Kasaragod.

3. Crop : Coconut (*Cocos nucifera* L.)
Variety : Chandra Kalpa (Lakshadweep Ordinary)
Sponsored by : All India Coordinated Research Project on Palms, Central Plantation Crops Research Institute, Kasaragod - 670 124, Kerala.

Parentage with details of its pedigree : *Pedigree* : Selection from original collections from Lakshadweep islands. Developed through *inter se* mating of phenotypically homogenous palms.

Description of the variety :

(1)	Habit	Tall
(2)	Mean No. of leaves on crown	26-30
(3)	No. of bunches with nuts on the crown	5 - 7
(4)	No. of bunches with buttons	4 - 8
(5)	Length of petiole (cm)	82-114
(6)	Length of leaflet bearing portion (Cm)	281-344
(7)	Length of middle leaflet (cm)	91-127
(8)	Breadth of middle leaflet (cm)	5-6
(9)	No. of leaf scars in 1 m length	27-35
(10)	Length of inflorescence (cm)	63-84
(11)	Length with spikelets (cm)	38-40
(12)	Length without spikelets (cm)	25-44
(13)	No. of spikelets	31-39
(14)	No. of female flowers/bunch	20-28
(15)	No. of bunches/year	11-13
(16)	Average number of nuts/year	97
(17)	Average copra/nut (g)	195 g.

Agency responsible for maintaining breeder's stock : CPCRI, Kasaragod and CPCRI Seed Farm, Kidu.

Any other pertinent information : This cultivar was also found to be good female parent contributing to drought tolerance in LO × CDO and LO × GB hybrids.

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4. Crop : Coconut (*Cocos nucifera* L.)
Variety : Chandra Sangara (D × T)
Sponsored by : Central Plantation Crops Research Institute, Kasaragod - 670 124, Kerala.
Parentage with details of its pedigree : *Parentage* ; A hybrid with Chowghat Dwarf Orange as female parent and West Coast Tall as male parent.

Description of hybrid and parents:*

	Hybrid	*Parents*	
	CDO × WCT	*CDO*	*WCT*
1. No. of leaves on crown	24-32	21-24	28-35
2. No. of bunches on crown with nuts	5-7	5-7	7-9
3. No. of bunches on crown with buttons	3-5	2-6	2-4
4. Length of petiole (cm)	118-136	91-102	89-109
5. Length of leaflet bearing portion (cm)	586-630	300-388	319-388
6. Length of middle leaflet (cm)	134-142	94-108	100-120
7. Breadth of middle leaflet (cm)	5-7	4-5	5-7
8. No. of leaf scars in 1 m length	31-36	40-46	17-20
9. Length of inflorescence (cm)	120-132	63-69	86-108
10. Length with spikelets (cm)	64-76	30-37	52-76
11. Length without spikelets (cm)	52-60	32-33	32-34
12. No. of spikelets	38-46	32-36	29-35
13. No. of female flowers/bunch	29-49	15-23	12-29
14. No. of bunches/year	8-10	9-11	11-13
15. Average no. of nuts/year	110	53	80
16. Average copra/nut (g)	208	150	180

(*parents with the above character ranges may be selected for production of CDO × WCT hybrids).

Agency responsible for maintaining breeder's stock : CPCRI, Kasaragod and CPCRI Seed Farm, Kidu will supply parental materials for establishing seed gardens.

5. Crop : Coconut (*Cocos nucifera* L.)

Variety : Chandra Laksha (LO × CDO)

Sponsored by : Central Plantation Crops Research Institute, Kasaragod - 670 124 (Kerala).

Parentage with details of its pedigree : *Parentage :* A hybrid with Lakshadweep ordinary as famale parent and Chowghat Dwarf Orange as male parent.

*Description of the hybrid and parents**	*Hybrid*	*Parents*	
	LO × CDO	*LO*	*CDO*
(1) No. of leaves on crown	23-32	26-30	21-24
(2) No. of bunches on crown with nuts	6-11	5-7	5-7
(3) No. of bunches on crown with buttons	3-6	4-8	2-6
(4) Length of petiole (cm)	125-149	82-114	91-102
(5) Length of leaflet bearing portion (cm)	580-642	291-344	300-388
(6) Length of middle leaflet (cm)	120-148	91-127	94-108
(7) Breadth of middle leaflet (cm)	5-7	5-6	4-5
(8) No. of leaf scars in 1m length	18-27	27-35	40-46
(9) Length of inflorescence (cm)	120-137	63-84	63-69
(10) Length with spikelets (cm)	64-82	38-40	30-37
(11) Length without spikelets (cm)	54-66	25-44	32-33
(12) No. of spikelets	36-42	31-39	32-36
(13) No. of female flowers/bunch	25-41	20-28	15-23
(14) No. of bunches/year	8-12	11-13	9-11
(15) Average No. of nuts/year	78	97	53
(16) Average copra/nut g.	195	195	150

(*Parents with the above character ranges may be selected for production of LO × CDO hybrids).

Agency responsible for maintaining breeder's stock : CPCRI, Kasaragod and CPCRI Seed Farm, Kidu will supply parental materials for establishing seed gardens.

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6. Crop : Cotton (*Gossypium hirsutum*)

Variety : H. 712 (Savita)

Sponsored by : Breeder's Central Institutes for Cotton Research, Regional Station, Coimbatore.

Parentage : T 7 (Female parent)
M 12 (Male parent)

Description of the hybrid :

Plant height (cm) : 100-150

Habit : Medium tall with short internodes

Monopodia : 0--3

Foliage : Light green, medium hairy lamina with 3-5 lobes and open canopy.

Corolla : Cream

Anther colour : Yellow

Petal spot : Absent

Bolls : Big bolls, ovate beaked tip, boll weight 4.2 to 4.7 g; 4 loculed.

Seeds : White fuzzy, medium (seed index 11.5 to 12.0).

Duration (seed to seed) : 165 to 175 days

Reaction to major diseases :
(i) Tolerant to *Verticillium* wilt as observed in the wilt sick locations in Tamil Nadu.
(ii) Hybrid T7 × M12 gave a wilt grade of "0" for new wilt disease while the disease rating was 10.8 in JK Hy-1(c) and 9.8 to 16.4 in DCH-32.
(iii) Susceptible to *Alternaria* and grey mildew diseases which can be effectively controlled by recommended fungicidal sprays.

Reaction to major pests : On par with JKHy-1(c) and MCU.5(c) in its susceptibility to sucking pests which can be effectively controlled by suitable insecticidal sprays.

Description of the parents of the hybrid Characters	*Female parent* Culture-17	*Male parent* Culture-M12
Plant height (cm)	100-125	100-125
Habit	Medium tall	Medium tall with short internodes
Monopodia	1-3	0-4
Foliage	Dark green, 3-5 lobed leaves; moderately hairy with typical light purple pigmentation in petiole and branches.	Light, green small medium sized leaves with 4-5 lobes, medium hairy lamina open canopy.

Corolla	:	Cream	Cream
Another colour	:	Yellow	Yellow
Petal spot	:	Absent	Absent
Bolls	:	Medium ovid, boll weight 4-0 to 4.5 g; 3-4 loculed	Medium small, slightly elongated boll weight 3.8 to 4.2 g; 4 loculed.
Seeds	:	Dull white fuzzy; medium; seed index 10.5 to 11.0 g.	White fuzzy; small to medium seed index 9.5 to 10.0 g.
Duration (Seed to seed)	:	175-185 days	160-170 days
Reaction to major diseases	:	Highly tolerant to *Vorticillium wilt.* Tolerant to grey mildew and bacterial blight, susceptible to alternaria.	Tolerant to alternaria; susceptible to bacterial bligh and grey mildew.
Reaction to major pests	:	Moderately susceptible to jassids and boll worms	Moderately susceptible to jassids and boll worms.
Agency responsible for developing the hybrid	:	Central Institute for Cotton Research, Regional Station, Coimbatore-641 003	

Instructions and guidelines on the conduct of grow-out tests on the Cotton Hybrid-T.7 × *M*12 (*H. 712 Savita*)

1. Control rows of female parent (culture T7) and hybrid are to be raised side by side with the commercial samples of hybrid seeds to be certified.

2. As the hybrid expresses characters intermediate between the parents, the following characters may be observed between the hybrid and female parent.

(a) The hybrid possesses *shorter* internode both on the main stem and sympodial branches as different from the somewhat longer internodes of the female parent.

(b) The hybrid plants show earlier maturity than the female parent. The hybrid is 9-10 *days earlier* than the female parent in producing the first square viz. bud initiation. This difference is maintained at the first *flowering* stage also.

(c) It is necessary to have the grow out duration till about 75-80 days from sowing.

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7. Crop : Cassava/tapioca *Manihot esculenta* (Crantz)

Variety : Sree Prakash

Sponsored by : Central Tuber Crops Research Institute (ICAR), Trivandrum, Kerala.

Parentage with details of its pedigree : A selection from the germplasm.

Description of the variety :

(a) Plant height : 125-150 cm (medium in stature)

(b) Distinguishing morphological characters : Erect; late branching; reddish brown straight stem having medium thickness and shorter internodes of about 1.3 cm; dark green leaves with broad 7-9 leaflets; mostly purple petiole; light sepia coloured emerging leaves; shallow and radial tuber arrangement; cylinderical long, shortnecked tubers having about 30 cm length and 15 cm girth at middle portion;
average number of tubers : 10;
mean weight of tuber : 320 g;
tubers having brown skin colour, cream rind colour and white flesh colour

Maturity (range in number of days) seedlings/transplanting to flowering/seed to seed : 200-210 days (7 months)

Agency responsible for maintaining breeder's stock : CTCRI, Trivandrum.

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8. Crop : Taro (*Colocasia esculenta*)

Variety : Sree Rashmi

Sponsored by : Central Tuber Crops Research Institute, Trivandrum.

Parentage with details of its pedigree : A selection from the Germplasm.

Description of the variety :

(a) Plant height : Tall plant, 100-110 cms, Erect, medium tillering type.

(b) Distinguishing morphological characters : Droopy leaves arranged clockwise, green medium broad, yellow spotted leaves, purplish green sheath. Big, cylinderical corns and medium, conical shaped cornels.

(c) Maturity (range in number of days) : 205-210 days

Agency responsible for maintaning breeder's stock : CTCRI, Trivandrum.

9.	Crop	Dinanath grass (*Pennisetum pedicellatum*)
	Variety	Bundel-1
	Sponsored by	Indian Grassland & Fodder Research Institute, Jhansi (UP)
	Parentage with details of its pedigree	This variety is a selection from an indigenous material collected from Madhya Pradesh.
	Description of the variety :	
	(a) Plant height (cm)	200-225
	(b) Distinguished morphological characters	Late maturing, purple stem colour, abundant long velvety hairs on ventral surface of leaf, very large loose spike, large spikelets with long bristles.
	(c) Maturity (range in number of days)	(i) Days to flowering : 100-110 days (ii) Days to maturity seed to seed : 140-150 days
	Agency responsible for maintaining breeders stock	IGFRI, Jhansi.

10.	Crop	Forage Sorghum
	Variety	Haryana Chari-260 (HC-260)
	Sponsored by	Director of Research, HAU, Hissar
	Parentage with details of its pedigree	It is a derivative from the cross SPV-103 × PC-9.
	Description of the variety :	
	(a) Plant height (cm)	240-245
	(b) Distinguishing morphological characters	HC-260 is highly resistant to all kinds of red leaf spot diseases. It is medium in height and stem thickness. Leaves are broad and long with white mid-rib. Panicle is semi-compact with white and medium sized seeds. It remains green upto maturity. It is one of the earliest maturing varieties. Its per day production for green and dry matter is quite high. It has high digestible dry matter as well as protein yield.
	(c) Maturity (range in number of days) seedling/transplanting to flowering, seed to seed.	85-90 days (From seed to seed)
	Agency responsible for maintaining breeder's stock	Department of Plant Breeding, Haryana Agricultural University, Hissar-125 004.

11.	Crop	Forage Sorghum
	Variety	Haryana Chari-171 (HC-171)
	Sponsored by	Director of Research, HAU, Hissar.
	Parentage with details of its pedigree	It is derivative from the cross SPV-8 × IS 4776.
	Description of the variety :	
	(a) Plant height (cm)	215-225
	(b) Distinguishing morphological characters	HC-171 is highly resistant to all kinds of foliar diseases in comparison to other released varieties. It is medium in height and stem thickness, leaves are broad and long. It has dark grreen mid-rib, stem is sweet and very juicy. Panicle is semi compact with creamy white and small seed. It has high digestible dry matter.
	(c) Maturity (range in number of days) seedling/transplanting to flowering seed to seed	110-115 days (seed to seed)
	Agency responsible for maintaining the breeder's stock	Department of Plant Breeding, Haryana Agricultural University, Hissar.

12.	Crop	Greater yam (*Dioscora alata*)
	Variety	Sree Keerthi (Da-60)
	Sponsored by	Central Tuber Crops Research Institute (ICAR), Trivandrum.
	Parentage with details of its pedigree	A selection from the germplasm
	Description of the variety :	
	(a) Plant height	Climber- 4-5 meters long.
	(b) Distinguishing morphological characters	Vine, climbing on support, twining in clockwise direction, light browr emerging leaves conical shaped tubers with brown skin and white flesh.
	(c) Maturity (range in number of days) seedling/transplanting to flowering/seed to seed.	280-300 days.
	Agency responsible for maintaining the breeder's stock	CTCRI, Trivandrum.

13. Crop	:	Little millet
Variety	:	Jawahar Kutki-8
Sponsored by	:	All India Coordinated Project for the improvement of minor millets, College of Agricultue, Rewa (M.P.) 486 001.
Parentage with details of its pedigree	:	*Pedigree :* Single plant selection from germplasm No. 8.
Description of the variety	:	Effective tillers in number : 8 Plant height (in cm) : 78.50 50% bloom in days : 48 Maturity in days : 80 Reaction to major pests in field : Moderately resistant to shootfly
Agency responsible for maintaining breeder's stock	:	Coordinating Unit, AICMIP, College of Agriculture, Rewa-486001.

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14. Crop	:	Linseed (*Linum usitatissimum* L)
Variety	:	Gaurav (LCK-152)
Sponsored by	:	Scientist Oilseeds Breeding, Chandra Shekar Azad University of Agril. & Tech., Kanpur-208 002.
Parentage with details of its pedigree	:	LCK-152 is a pedigree selection from the cross between sel. 3 and EC 1552.
Description of the variety :		
(a) Technical Plant height	:	55-60 cm.
(b) Total plant height	:	70-80 cm.
(c) Distinguishing morphological characters	:	Plant tall, erect, compact; primary branching good, generally attaining the height of the mother-shoot; flower large, bluish-violet in colour with fading tendency; capsules bold with fawn coloured bold seeds, fruiting in clusters in topmost 15-20 cm zone making it an ideal double purpose plant type.
(d) Maturity	:	135-140 days
Agency responsible for maintaining the Breeder's seed	:	Chandra Shekar Azad University of Agri. & Tech., Kanpur.

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15. Crop	:	Mungbean (*Vigna radiata* Wilezek)
Variety	:	Pusa-105
Sponsored by	:	Head, Division of Genetics, IARI, New Delhi-110012.
Parentage with details of pedigree	:	The variety was developed from a single plant selection of IARI breeding line M178 which was developed from the cross: (Tainan 1 × ML-6) × (EG-MG-16 × ML-3).
Distinguishing morphological characters of the variety:		
(i) Plant height	:	60 to 70 cm.
(ii) Habit and Height	:	Pusa 105 is comparatively a taller (60-70 cm) variety with a higher biomass production and late senescence. Plants are green, erect and more branched.
(iii) Branches	:	4-6 primary branches per plant which run parallel to the central axis.
(iv) Leaves	:	Trifoliate dark-green leaves of medium size.
(v) Inflorescence	:	Flowers are borne in groups of 10-20 flowers. It is auxillary and terminal Raceme is capitate. Peduncle is medium.
Pods	:	These are borne in groups of 5-13. Pods are 6-8 cm long each with 9-13 seeds. In summer these are brownish and in rainy season dark in colour.
Seeds	:	Shining green with 1000 grain weight around 40 gms. Seeds are glabrous with a slightly raised white hilum.
Maturity	:	Pusa-105 matures in 75 days in spring and Kharif seasons but matures in 60-65 days only in summer season and in rabi season (rice fallow).
Agency responsible for maintenance of breeder's seeds	:	IARI, Division of Genetics, New Delhi.

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16. Crop	:	Mungbean (*Vigna radiata* L Wilezek)
Variety	:	PDM 11
Sponsored by	:	Directorate of Pulses Research, (ICAR), Kanpur.
Parentage with details of its pedigree	:	Selection from LM 595

Description of the variety :		
(a) Plant height	:	Average 55 cm (50-60 cm range)
(b) Distinguishing morphological characters	:	Erect bushy, 1-2 branches leaflets small, green, ovate pubescent flowers yellow with purple tinges, number of pods per plant varied from 45-72, pod length 6.5 to 7.1 cm, brownish black pods, number of seeds per pod varied from 9-11, shining green cylindrical medium size seed (3.25-2.75 g/100 seeds weight)
Maturity (range in number of days)	:	Average 75 days (70-80 days range)
Agency responsible for maintaining breeder's stock	:	Directorate of Pulses Research (ICAR), Kanpur.

17. Crop	:	Mungbean (*Vigna radiata* L Wilezek)
Variety	:	PDM-54
Sponsored by	:	Directorate of Pulses Research (ICAR), Kanpur.
Parentage with details of its pedigree	:	Selection from germplasm collected from Kundwa (Distt. Bahraich).
Description of the variety :		
(a) Plant height	:	40 cm (mean), 30-50 cm (range)
(b) Distinguishing morphological characters	:	Erect bushy, small green pubescent ovate leaflets, 1-3 branches, flowers yellow with purple tinges pods uniformly green when unripened and blackish brown at maturity, pod length varied from 5.0 to 7.0 cm, number of pods per plant varied from 20-50, average number of seeds per pod varied from 8 to 12 (average). Shining green rectangular bold seed (4.00 to 4.25 g/100 seeds weight).
Maturity (range in number of days)	:	Average 60 days (55 to 65 days) in Kharif in NEPZ.
Agency responsible for maintaining breeder's stock	:	Directorate of Pulses Research, Kanpur

18. Crop	:	Rajmash (Frenchbean) (*Phaseolus vulgaris* L.)
Variety	:	Uday (PDF-14)
Sponsored by	:	Directorate of Pulses Research, (ICAR), Kanpur-208024
Parentage with details of its pedigree	:	Selection from germplasm line EC 94453.
Description of the variety :		
(a) Plant height	:	45-50 cm (under Kanpur conditions as irrigated crop)
(b) Distinguishing morphological characters	:	Determinate growth habit, erect plant with vertical orientation of leaves, flowers are creamish white. Pods auxillary at each node, pods green at grain, filling stage but straw colour at maturity. Matured pods are without spots and almost straight.
Maturity (range in number of days) seed to seed	:	110-120 days (Oct. sown crop).
Agency responsible for maintaining the breeder's stock	:	Directorate of Pulses Research, Kanpur.

19. Crop	:	Soybean (*Glycine max.* L.)
Variety	:	Pusa-16 (DS-73-16)
Sponsored by	:	Head, Division of Genetics, IARI, New Delhi-110012.
Parentage with details of its pedigree	:	The variety has been evolved from a straight cross involving two exotic varieties viz. CNS (from Australia) and Lee (from USA). The pedigree method of selection was used for handling the cross in the early segregating generations. Out of a number of homozygous lines tested in the Institute trials at Delhi, DS-73-16 was selected.
Description of the variety :		
(a) Plant height	:	Ranges from 60 to 90 cms depending upon the location and ecological conditions.
(b) Distinguishing morphological characters	:	Leaves medium in size, purple flowers, tawny pubescence, compact plant, medium seed size, (11.5 gms/100 seeds), yellow seed coat, grey hilum.
(c) Maturity (range in number of days) seedling/transplanting to flowering/seed to seed	:	This variety takes 105 to 115 days from seed to seed.
Agency responsible for maintaining the breeder's stock	:	The Division of Genetics, IARI, New Delhi.

20. Crop : Soybean (*Glycine max.* L.)

Variety : Pusa-24 (DS-74-24-2)

Sponsored by : Head, Genetics Division, IARI, New Delhi-110012.

Parentage with details of its pedigree : The variety has been evolved from a straight cross involving two exotic varieties viz. Shelby and Bragg-both from USA. The pedigree method of selection was used for handling the cross in the early segregating generations. Out of a number of homozygous lines tested in the institute Trials at Delhi, DS-74-24-2 was selected.

Description of the variety :

(a) Plant height : Ranges from 60 to 100 cms depending upon location, date of sowing and other ecological factors.

(b) Distinguishing morphological characters : Leaves medium in size, sparsely distributed throughout the length of the stem; white flowers; tawny pubescence, compact plant, medium bold seeds (14.2 gms/100 seeds), yellow seed coat, black hilum.

(c) Maturity (range in number of days) seedling/transplanting to flowering/seed to seed : The variety takes about 110 days from seed to seed in the Northern Plain Zone. In the Northern Hill Zone it takes about a week more to attain maturity.

Agency responsible for maintaining breeder's stock : The Division of Genetics, IARI, New Delhi.

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21. Crop : Sunflower

Variety : MSFH-8 (Mahyco Sunflower Hybrid No. 8)

Sponsored by : All India Coordinated Sunflower Research Project.

Parentage with details of its pedigree : MHS-71 × MHR-57 Single cross

Description of Hybrid :

(a) Days to 50% flowering : 62 to 64 days
(b) Plant height : 190 to 200 centimeters
(c) Leaf type : Large broad, serrated
(d) Head diameter : 18 to 22 centimeters
(e) Centre filling : Good centre filling
(f) Days required for maturity : 92 to 94 days
(g) Plant pigmentation : Normal, green
(h) Oil content : 42 to 44%
(i) Pollen shadding : Profuse pollen
(j) Monohead type hybrid :
(k) Yield per hectare : 15 to 18 quintals. A maximum yield of 47.771 qtls. was harvested per hectare in the adaptive trials.

Description of parents :

Sl. No.	Particulars	MHS-71 (Female)	MHR-57 (Male)
(a)	50% flowering	64 days	64 days
(b)	Plant height	150 to 160 cms	160 to 170 cms
(c)	Head	Rounded forehead (Monohead)	Branching type
(d)	Diameter	15 to 20 cms.	Multi-flower. Main head is 5-6 cms. in size. Main head is larger than accelary flowers with elongated pedicles.
(e)	Leaves	Light green colour broad leaves	Medium size leaves.
(f)	Pigments	Normal	Reddish pigments on petioles and stem.
(g)	Oil content	38 to 40%	43 to 45%
(h)	Fertility	Sterile	Fertile, gives sufficient pollen.

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22. Crop : Sweet Potato (*Ipomoes Batatas Poir*

Variety : Samrat

Sponsored by : Andhra Pradesh Agricultural University, Rajendra Nagar, Hyderabad. A.P.

Parentage with details of its pedigree : Among the germplasm collection which included both indigenous and exotic types, a high yielding clump was identified (material collected from Darsi, Nellore Dt.) and Multiplied.

Description of the variety

(i) Plant height : 130-145 cm.

(ii) Plant spread : Medium spread

(iii) Stem girth : Thick and succulent (2.2 cm)

(iv) Branching habit : Axillary

Distinguishing morphological characters :

(1) Leaf shape : Cordate

(2) Leaf colour : Dark green with purplish vein and petiole

Maturity (range in number of days from planting to tuber harvest) : 100-120 days

No. of days for initiation of tuberization :

Kharif : 50-55 days
Rabi : 45 days
Summer : 55-60 days

Agency responsible for maintaining breeder's stock : Horticulturist, A.P. Agricultural University, Rajendranagar, Hyderabad-500 030.

23. Crop : Sweet Potato (*Ipomoes Batatas* Poir)

Variety : Sree Vardhini (76-OP-219)

Sponsored by : Central Tuber Crops Research Institute (ICAR), Trivandrum, Kerala.

Parentage with details of its pedigree : Development from open pollinated bulk seeds.

Description of the variety :

(a) Habit : Semi-spreading

(b) Distinguishing morphological characters : Leaf 3-5 lobed, shallow lobed, middle lobe conspicuously long, emerging leaf with light brown margin; shy flowering; tuber shape oblong with pink colour skin and orange flesh.

(c) Maturity : 100-105 days

Agency responsible for maintaining the breeder's stock : CTCRI, Trivandrum.

24. Crop : Bajra or Pearl Millet (*Pennisetum americanum* L.) Leeke

Name of the Hybrid : Pusa-23 (Hybrid)

Sponsored by : All India Coordinated Millet Improvement Project (AICMIP), College of Agriculture, Pune-411 005.

Parentage with details of its pedigree : Pusa-23 is a hybrid made by crossing the pollinator K-560-230-23 (D-23) on male sterile line MS 841A.

Description of the hybrid (*Pusa*-23) :

(a) Plant height (cm) : 165 (All India Average)
125-240 (All India range)

(b) No. of tillers : 2-4

(c) Panicle length (cm) : 22.5

(d) Grain colour : Light grey

(e) Grain size (1000 gr. wt.) : 10.8 gm.

(f) Distinguishing morphological features : Leaf medium wide, glabrous, Ears. bold compact, tapering at the apex. Anther colour yellow.

(g) Maturity :

Days to flowering : 50
Days to maturity : 82

States	*Days to* 50% *bloom* (Pusa-23)
Rajasthan	49
Maharashtra	52
Gujarat	51
Uttar Pradesh	50
Haryana	52
Karnataka	51
Andhra Pradesh	52
Tamilnadu	44
Punjab	54
Delhi	52
All India mean	51

Description of the pollinator K-560-230-23 (D-23) :

(a) Plant Height (cm) : 160 (110-205)

(b) Distinguishing morphological features :
- Leaf : Wide
- Stem : Green
- Earhead : Thick medium compact
- Anther colour : Yellow
- Seed : 10.1 gms/1000 gms.

(c) Maturity (range in number of days) : 87-95

(d) Reaction to major diseases : Resistant to Downy mildew.

(e) Reaction to major pests : No pest problem reported

Description of the male sterile Line 841A

(a) Plant height : 73-164 cm

(b) Distinguishing morphological characters :
- Leaf : Mostly hairy leaf sheath
- Stem : Nodes having a ring of hairs
- Head shape : Cylindrical

(c) Maturity range (days) : 84-95

(d) Reaction to major diseases : Resistant to Downy mildew.

(e) Agency responsible for maintaining the breeder's stock : IARI, New Delhi

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ANNEXURE III

Important features of the Varieties recommended for Notification in the 8th Meeting of the Central Sub-Committee on Crop Standards, Notification and release of Varieties

1. Crop	Muskmelon
Variety	Punjab Hybrid
Parentage	Male sterile line (MS-1) × Hara Madhu
Breeder/Institute responsible for maintaining the breeder's stock	Department of Vegetable Crops, Landscaping and Floriculture, Punjab Agricultural University, Ludhiana.
Description of variety Pb. Hybrid	(a) *Plant Characters* : Vines long, vigorous with luxuriant growth
	(b) *Fruit Characters* : Fruits round netted light yellow with light green sutures, Flesh thick, orange, juicy, flavoursome and sweet (TSS 12%).
	(c) *Earliness* : It takes 77 days from transplanting to maturity (12 days earlier than Hara Madhu).
	(d) *Keeping quality* : Fruits harvested at full slip stage and stored under room temperature conditions remain in good condition for three days. Fruits harvested at turning stage remain marketable stage for five days. Under cold storage conditions (33°F and 85-90 per cent R.H.), full ripe and half ripe fruits can be stored for thirteen and seventeen days respectively.
Two identifiable morphological characteristics of the variety	Andromonoecious, fruits sutured, rind netted, flesh orange.
Description of male sterile line (MS-1)	Vines are small with dark green foliage, andromonoecious, fruit round intensity netted, sutured; flesh, thick, medium in juiciness, orange and fairly sweet (8-9 percent). The seed lot comprises 50 percent male sterile homozygous and 50% fertile heterozygous genotypes. It is maintained by back crossing to the heterozygous fertile plants.
Yield	65-Q/acre.

2. Crop	Paddy
Variety	Pant Dhan - 6
Parentage	IR-8608-298-3-1 × IR 10179-23
Breeder/Institute responsible for maintaining breeder's stock	G.B. Pant University of Agril. & Tech., Pantnagar.
Description of variety/hybrid (in case of hybrid, give description of parents)	It is an early maturing (113-120 days) (in the hills) semi-dwarf variety suitable for transplanting in the lower and medium altitude regions of the hills Its average yield potential under transplanted conditions is 40.87 q/ha. The grains are medium slender.
Two identifiable and distinguishable morphological characteristics of the variety	(i) Dwarf, compact plant type (ii) Foliage and apiculus green (iii) Medium slender grains (iv) Awnless but may develop tip awn in certain environments.
Yield :	
(a) Commercial product	Average yield is 40.87 q/ha with the potential of yielding.
(b) Seed	60 q/ha.

3. Crop	Paddy (*Oryza sativa* L.)
Variety	JOGEN (IET 8967) CN 505-5-32-9
Parentage	IR 26 × SML 40-10-4
Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Chinsurah-712 102
Description of the variety/hybrid	Stiff straw, high tillering, non-lodging, semi-tall (110-140 cm.) photoperiod sensitive flower around mid November. Compact, erect flag leaf, good exsertion. non-shattering ear length-21 cm. Awnless, golden colour grain, grain dimension-7.7× 3.2 mm, L/B ratio 2.40, 1000 grain wt. 24.8 gm Kernel white, strong dormancy (about 3 months), Suitable for rainfed low land areas where water depth varies between 50 & 70 cm.
Two identifiable and distinguishable morphological characteristics of the variety	Semi tall plant type, high tillering erect flag leaf, medium bold golden colour grain.
Yield (Seed):	
Yield potential	6 t/ha.
Average yield	4 t/ha (over twenty locations)

4. Crop	Paddy (*Oryza sativa* L.)
Variety	Sabita (IET 8970)
Parentage	Pure line selection from a local tall *indica* cultivar "Boyan" (ACC 30250)
Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Chinsurah, West Bengal-712 102.
Description of the variety/hybrid	Semi-tall, height 150-160 cm, stiff straw photoperiod sensitive long flag leaf, moderate tillering, good exsertion, non-shattering, earlength-26 cm. awnless, grain/panicle 160-170, golden colour grain, grain dimension-10.9×2.9mm. strong dormancy (about 3 months), Suitable for low lands (32-60 cms water depth).
Two identifiable and distinguishable morphological characteristics of the variety	Semi tall, green-pulvinus, auricle, glume, apiculus. long slender golden colour grain.
Yield (Seed) :	
Yield potential	6 t/ha.
Average yield	4 t/ha (over twenty nine locations)

5. Crop	Rai (*Brassica juncea*)
Variety	Bhagirathi (RW-351)
Parentage	The variety was developed from a cross between Varuna (T-59) and Appressed mutant (APM).
Breeder/Institute responsible for maintaining breeder's stock	Pulses and Oilseeds Research Station, Berhampore, West Bengal.
Description of the variety/hybrid	Plant tall, erect in nature; of angle branching is acute; Siliqua appressed to the main short and branches; seeds brown, medium.
Two identifiable and distinguishable morphological characteristics of the variety	(a) Plant tall, erect angle of branching acute. (b) Siliqua appressed to the main short and branches; leaf margin serrated.
Yield (seed) :	
Potential yield	1600 kg/ha
Average yield	1400 kg/ha

6. Crop	Safflower
Variety	Nira
Parentage	NS 1572 × EC 32012 (Developed by pedigree method)
Breeder/Institute responsible for maintaining breeder's stock.	Safflower Breeder, Nimbkar Agricultural Research Institute, Phaltan (Maharashtra).
Description of variety/Hy. (in case of Hy. please give separate description of the parents)	The plant height is 75-90 cm and with spreading growth habit and it matures in 120 days. Leaves are smooth, dark green in colour.

Two identifiable and distinguishable morphological characteristics of the variety	Buds are yellow in colour and blooms are yellow light orange base. Average 1000 seed weight is 55·5 gms. It yield 24% more than local check Bhima and has a potential to yields 30 qtls. per hectare. Oil content is 32.5% which is higher than local varieties Bhima and A-1 varieties. It is suitable as an irrigated Rabi/crop under limited irrigation.
Yield:	
Commercial Production	30-40 qtls/ha
Seed	20 to 25 qtls./ha.

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7. Crop	Wheat (*Triticum aestivum*)
Variety	UP-1109 (Pant Wheat 1109)
Parentage	UP 262 × UP 368
Breeder/Institute responsible for maintaining the breeder's stock	G.B. Pant University of Agril & Tech., Pantnagar.
Description of variety/hybrid (in case breeder stock of hybrids/give description of parents)	It is a double dwarf, profuse tillering, medium late maturity with white glumes and amber hard grains. It has easy threshability.
Two identifiable and distinguishable morphological characteristics of the variety	(i) Double dwarf with dark green foliage. (ii) White glumes at maturity. (iii) Fully awned.
Yield:	
(a) Commercial product	It has given an yield potential of 50-55 q/ha.

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8. Crop	Wheat (*Triticum aestivum* L.)	
Variety	BW 11 (Purbali)	
Parentage	CM 33090-TV-2N-4Y-OM-1169 Sel. Pedigree: (KUZ-Titi × Titos)	
Breeder/Institute responsible for maintaining the breeder's stock	Directorate of Agriculture, West Bengal.	
Description of the variety/hybrid	Plant height 82-86 cm, heavy synchronous tiller semi erect green leaf. white glumes. With dense spike. 115±3 days duration.	
Two identifiable and distinguishable morphological characteristics of the variety	(i) Erect green leaf. (ii) Heavy synchronous tillering.	
Yield:	*Normal sown*	*Late sown*
Yield potential	4.5 t/hec.	4.3 t/hec.
Average yield	3·8 t/ha.	1.8—2.4 t/h

ANNEXURE IV

1. Name of the Variety
2. Breeding Pedigree
3. Source of material in case of introductions
4. Maturity group (early, medium and late)
5. Recommended ecology
6. Quality of produce (grain/forage/fibre including nutritive value where relevant)
7. Reaction to stresses

Minutes of the Ninth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 2nd November, 1987 under the Chairmanship of Dy. Director-General (CS), ICAR, Krishi Bhavan, New Delhi

The list of the participants is appended as at Annexure I.

2. The Chairman welcomed the members and mentioned about the postponement of the Meeting scheduled for 19th October, 1987. During general discussion members gave several suggestions to bring about improvement in maintenance of the quality of seed. Some of the important recommendations are given as under:

(i) to maintain the quality of oilseeds, specially of Sunflower, there should be specified standards for minimum oil content in respect of each variety. Similarly for Groundnut the standards for shelling percentage and oil content should also be fixed;

(ii) wherever grain characters are distinct and identifiable, they should be incorporated in the Minimum Seed Certification Standards;

(iii) the maximum number of generations under seed production should be clearly specified and followed in respect of composites and synthetic varieties. The certification agencies should maintain a proper pedigree record in such cases.

3. After this, the regular Agenda Items were taken up for discussion and the position in respect of each item is indicated below:

Item No. 1: Confirmation of the minutes of the Eighth Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 13th July, 1987.

4. The minutes of the 8th Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties were confirmed.

Item No. 2: Review of action on the minutes of the Eighth Meeting of Central sub-Committee on Crop Standards, Notification and Release of Varieties.

5. The position indicated in the Agenda Notes was noted by the Sub-Committee/Participants.

Item No. 3: Conduct of the adaptive trials and generation of the data for varietal release.

6. The Committee noted the recommendations made in the Meeting held under the Chairmanship of Dr. M. V. Rao, Special Director General, ICAR regarding the adaptive and minikit trials. The Committee after detailed discussion recommended the following:

(i) At least five trials on farmers fields should be conducted in each Agro-climatic Zone for which a particular variety is likely to be recommended for release;

(ii) The minimum size of the plot would be half an acre for conducting the trials;

(iii) Required quantity of seed would be made available by the concerned breeder for conducting the trials.

Item No. 4: Consideration of Proposals for Release.

7. 34 proposals of various varieties of different crops were considered for release and notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated as under. The varieties which were recommended for Release were also recommended for Notification under Section 5 of the Seeds Act for entire country.

(i) **Detail of the varieties recommended for Release and Notification**

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Arhar	Pusa-33	Recommended for Release for cultivation in double cropping situation under irrigated/assured rainfall areas for pre-monsoon sowing in the States of Punjab, Haryana, Delhi, Rajasthan, U.P., M.P., Gujarat and Maharashtra. The variety has also given encouraging results in April sown Arhar+Moong/Urd inter cropping the practice which is widely followed by farmers in Western region.
2.	Bajra	ICMH-423	Recommended for Release for cultivation in all bajra growing areas of the country.
3.	Berseem	BL-22	Recommended for Release for cultivation in North-western zone and temperate zone of India.
4.	Castor	GCH-4	Recommended for Release for cultivation in Castor growing states of India i.e. Gujarat, Andhra Pradesh, Tamil Nadu, Karnataka, Bihar, Uttar Pradesh and Rajasthan.

1	2	3	4
5.	Cauliflower	Pusa Snowball K-1	Recommended for Release for cultivation throughout the country where snowball cauliflower is grown.
6.	Cauliflower	Pusa Shubhra	Recommended for Release for cultivation where areas infested with black rot disease.
7	Carrot	Pusa Yamdagni	Recommended for Release for cultivation throughout the country where temperate type of carrot is grown.
8.	Guar	HFG-258	Recommended for Release for cultivation in all guar growing regions of the country.
9.	Gram	Pusa-267 (BG-267)	Recommended for Release for cultivation both under irrigated and rainfed conditions in the States of Punjab, Haryana, Rajasthan and Uttar Pradesh.
10.	Linseed	Kiran (RLC-6)	Recommended for Release for cultivation under rainfed area of Zone III in Madhya Pradesh, Maharashtra, Rajasthan, Orissa and Karnataka.
11.	Linseed	Jeewan (DPL-21)	Recommended for Release for cultivation in all Linseed growing areas of Northern India as dual purpose variety.
12.	Sugarbeet	IISR Comp-I	Recommended for Release for cultivation in U.P., Rajasthan, Punjab and West Bengal.
13.	Sugarbeet	Pant S-10	Recommended for Release for cultivation in U.P., Rajasthan, Punjab, West Bengal etc.
14.	Tomato	Pusa Gaurav	Recommended for Release for cultivation throughout India.
15.	White Yam	Sree Priya	Recommended for Release for cultivation in Kerala State.
16.	White Yam	Sree Subhra	Recommended for Release for cultivation in Kerala State.
17.	Bajra	HHB-50	Recommended for Release for cultivation in bajra growing areas of the country.
18.	Barley	BHS-169	Recommended for Release for cultivation in lower and mid-hills, of northern hills zone comprising the States of Jammu & Kashmir, Himachal Pradesh, under normal sown rainfed conditions.
19.	Cotton	Kanchana	Recommended for Release for cultivation in all the irrigated and rainfed areas in the southern cotton zone where whitefly is a problem.
20.	Guar	HFG-159	Recommended for Release for cultivation in North-West Zone of the country.
21.	Maize	Arun	Recommended for Release for cultivation for Punjab, Haryana, Rajasthan, Delhi, Uttar Pradesh and Bihar.
22.	Paddy	Annada	Recommended for Release for cultivation as rainfed upland in all Coastal districts Dhenkanal and Koraput districts of Orissa; Coastal districts of West Bengal; Chhotanagar of Bihar; Chattisgarh region of Madhya Pradesh and Andaman.
23.	Soybean	Pusa-20	Recommended for Release for cultivation in Northern Hill Zone including North Eastern Hill Complex and parts of North Plain and Central Zones.

8. The detail of the important features of the above varieties is given in Annexure II.

(ii) Details of the varieties which could not be recommended for Release & Notification is given as under. The sponsoring Authority may kindly note the observations of the Committee and resubmit the proposals alongwith the necessary information wherever it is requested

S.No. 1	Crop 2	Variety 3	Remarks 4
1.	Arhar	TAT-5	No yield superiority was observed and variety is also reported susceptible to various diseases and thus not recommended for Release and Notifications.
2.	Arhar	Shard	The proposal might be resubmitted in the prescribed proforma with the recommendation of All India Workshop. However, the variety is proposed to be released for Bihar State only and thus the proposal could be submitted to Bihar State Seed sub Committee for release.

1	2	3	4
3.	Brinjal	Azad Kranti	The proposal might be resubmitted with details of All India Coordinated trials against suitable checks and proposal should be signed by the Head of the Institution.
4.	Onion	Agrifound Dark Red	The variety should be tested under coordinated trials and proposal might be re-submitted along with details of data generated under coordinated trials.
5.	Tomato	Azad-T-2	Not approved because proposal is meant only for release for cultivation in U.P. Therefore, the Sponsoring Authority could submit the proposal to State Seed Sub-Committee for its consideration. Apart from that the recommendation of All India Workshop was not given in the proposal.
6.	Wheat	*Maghar* (K-8027)	The proposal might be re-submitted in the prescribed proforma and recommendation of the All India Workshop might be indicated.
7.	Moong	Rajendra Sona	The proposal might be re-submitted in the prescribed proforma and recommendation of All India Workshop might be indicated.
8.	Maize	Hans	The information submitted by Project Coordinator might be analysed by the Secretariat of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties and proposal might be placed for the consideration of the Committee in the next Meeting.
9.	Maize	Mansar	
10.	Maize	Navjot	
11.	Maize	Kiran	

Item No. 5: Consideration of the proposals for Notification under Section of 5 of the Seeds Act.

9. 25 proposals of different varieties of various crops were considered for notification under Section 5 of the Seeds Act. The recommendation of the Committee in respect of each proposal is indicated below. The Sponsoring Authority may kindly note the position and take necessary action accordingly:

(i) **Details of the varieties recommended for notification for entire country under Section 5 of the Seeds Act**

S.No.	Crop	Variety
1	2	3
1.	Arhar	TTB-7
2.	Chinese Cabbage	Chini Sarson
3.	Cowpea	KBC-1
4.	Cowpea	TVX Cowpea (TVX-944-026)
5.	Groundnut	M-335
6.	Groundnut	GG-11
7.	Groundnut	VRI-1
8.	Maize	VL Makka -41
9.	Paddy	IET 7191
10.	Paddy	PR-109
11.	Radish	Pusa Chetki
12.	Radish	Punjab Ageti
13.	Ragi	INDAF-9 Chitta
14.	Field Pea	Aparna
15.	Triticale	TL 1210
16.	Sesamum	TC-289

10. The details of the morphological characters etc. of the above varieties are given in Annexure III.

(ii) Details of the varieties which could not be recommended for Notification. The sponsoring authorities are requested to re-submit the proposals along with information indicated against each variety

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Arhar	T-7	Parentage might be described in detail.
2.	Brinjal	Punjab Barsati	(i) Quantity of breeder seed might be indicated. (ii) Recommendations of All India Workshop might be given.
3.	Brinjal	Sada Bahar. Bangan	Recommendation of All India Workshop might be indicated.
4.	Cotton	Vikas (CA 10-2)	Recommendation of All India Workshop might be indicated.
5.	Hy. Napier Grass	BH-18	—Do.—
6.	Paddy	Phuskala (RGL-2624)	The proposal might be re-submitted alongwith the views of Project Director (Rice). The secretariat of Central Sub-Committee on Crop Standards, Notification and Release of Varieties might also be obtained the views of Project Director (Rice) about the testing facilities of these location specific varieties and about their popularity in Andhra Pradesh.
7.	Paddy	Mahendra (RGL-1750)	
8.	Paddy	Vamshi (RGL-1746)	
9.	Paddy	Manday Vijaya	The recommendation of All India Workshop might be indicated.

Miscellaneous Item

Provisional Certification of the popular varieties recommended for Release and Notification namely Hy. Bajra-ICMH-423, Hy. Castor—GCH-4, Cotton—Kancha and Ragi-Indaf-9 in the present meeting:

10. The members of the respective States informed that these varieties are becoming popular among the farmers and foundation seed is likely to be produced in the current season. Therefore, they requested that the notification of these varieties might be issued on priority basis and registration of the area for certification on provisional basis might be permitted.

11. The meeting ended with a vote of thanks to the Chair.

ANNEXURE I

List of the Participants who have attended the 9th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held under the Chairmanship of DDG(CS), ICAR, on 2nd November, 1987 in Krishi Bhavan, New Delhi

1.	Dr. C. Kempanna, Dy. Director General (CS), Indian Council of Agril. Research, Krishi Bhavan, New Delhi.	*Chairman*
2.	Dr. P.K. Agrawal, Head, Seed Science and Technology, IARI, New Delhi.	*Member*
3.	Dr. Munshi Singh, Head, Genetics Division, IARI, New Delhi.	*Member*
4.	Dr. M.M. Payek, Ex-Head, Division of Mycology & Plant Pathology, IARI, New Delhi.	*Member*
5.	Shri B.R. Barwale, Chairman and Managing Director, Maharashtra Hybrid Seeds Co., Jalan (Maharashtra).	*Member*
6.	Dr. Rajender Singh Tehlan, V & P.O. Dichaon Kalan, New Najafgarh, New Delhi.	*Member*
7.	Shri V.N. Puri, Paramjeet Ganj, Kapurthalla, Punjab.	*Member*
8.	Shri P. Manickavasagam, Director of Seed Certification, Coimbatore-641030 (T.N.).	*Member*
9.	Shri Prem Singh Gill, Director, Punjab State Seed Certification Authority, Chandigarh	*Member*
10.	Shri J.N. Johri, Director, Rajasthan State Seed Certification Agency, Jaipur.	*Member*
11.	Shri S. Venkat Reddy, Director, A.P. State Seed Certification Agency, Hyderabad.	*Member*
12.	Shri B.U. Modi, Director, Gujarat State Seed Certification Agency, Ahmedabad.	*Member*
13.	Shri K.G. Roy, Chief Seed Certification Officer, West Bengal State Seed Certification Agency, Calcutta.	*Member*
14.	Dr. S.N. Joshi, Director of Agriculture, Gujarat, Ahmedabad.	*Member*
15.	Capt. V.N. Kumar, Managing Director, Terai Beej Pvt. Ltd., Bajpur, Distt. Nainital (U.P.).	*Member*
16.	Shri Harbans Singh, Chief Seed Certification Officer, Seed Certification Agency, Delhi.	*Member*
17.	Shri B.N. Sehgal, Joint Director of Agriculture, Delhi Admn., Delhi.	*Member*
18.	Shri K. Phool Singh, Director, Haryana State Seed Certification Agency, Chandigarh.	*Member*
19.	Shri A.V. Torke, Director, Karnataka State Seed Certification Agency, Bangalore.	*Member*
20.	Shri R.R. Sharma, Director, U.P. State Seed Certification Agency, Lucknow.	*Member*
21.	Shri I.S. Bist, Dy. Secretary (Seeds) Government of India, Ministry of Agriculture, Deptt. of Agri. & Coopn., Krishi Bhavan, New Delhi.	*Member-Secretary*
22.	Dr. V.S. Seshadri, Head, Division of Vegetable Crops, IARI, New Delhi.	*Others*
23.	Shri D.V. Singh, Managing Director, M.P. State Seed Certification Agency, Bhopal.	,,
24.	Shri T.S. Sandhu, Joint Director Agriculture, Haryana, Chandigarh.	,,
25.	Shri Harish Nahan, Seed Testing Officer, Punjab, Ludhiana.	,,
26.	Dr. N.P. Nema, Chief (RD & QC), National Seeds Corporation Ltd., New Delhi.	,,
27.	Shri T. Ganapathi, Addl. Director of Agriculture, Tamil Nadu.	,,
28.	Shri N.S. Tunwar, Dy. Commissioner (QC&T), Ministry of Agriculture, Deptt. of Agri. & Coopn., New Delhi.	,,
29.	Shri. M.S. Shukla, Dy. Seed Officer, Ministry of Agriculture, Deptt. of Agriculture & Coopn., New Delhi.	,,
30.	Shri D.S. Mishra, Sr. Tech. Asst. Deptt. of Agri. & Coopn., New Delhi.	,,

ANNEXURE II

The important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Ninth Meeting held on 2-11-1987

1. Crop : Arhar (*Cajanus cajan* (L.) *Mill* sp.)

Variety : Pusa-33

Sponsored by : Head, Genetics, IARI, New Delhi-110012.

Parentage with details of its pedigree : Pusa-33 was selected from the cross C11 × UPAS-120, involving parents with diverse plant type and maturity duration.

Description of variety:

(a) Plant height : 170-195 cm

(b) Distinguishing morphological characters :

- (i) Growth habit : Indeterminate branching; semi-spreading plant type.
- (ii) Leaf characters : Deep green trifoliate, compound, leaflets oblong, lanceolate, acute, entire, densely silky beneath, upper surface smooth.
- (iii) Flower : Pepilionaceous, standard-yellow having light streaks; wings light yellow, keel-cream coloured.
- (iv) Pods : Unripe pods green with purple streaks, slightly hairy, ripe dark straw, pod size medium in length (5-6 cm) having 4 seeds/pod; pods 180-210/plant.
- (v) Seeds : Brown, round, medium bold weighing approximately 7.5 gms/100 seeds.

Average of maturity duration : The variety matures in 135 days.

Agency responsible for maintaining breeder's stock : I.A.R.I., Regional Station, Karnal.

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2. Crop : Bajra or Pearl Millet (*Pennisetum americanum* (L.) Lecke).

Variety : ICMH-423.

Sponsored by : All India Coordinated Millets Improvement Project (AICPMIP), College of Agriculture, Pune-411005, Maharashtra.

Parentage with details of its pedigree : ICMH 423 is a hybrid made by crossing the pollinator ICMP-423, ECS3211-1 on the male-sterile line 841A.

Description of the hybrid: : ICMH 423

(a) Plant height : 93-256 cm.

(b) Distinguishing morphological characters :

- (i) Leaf : Glabrous leaf blade.
- (ii) Stem : Mostly hairy node.
- (iii) Ear Head : Cylindrical shape.
- (iv) Glumes : Purple at maturity (dependent on environment)
- (v) Seed : Globular

(c) Maturity (range in number of days) : 74-91

(d) Reaction to major diseases : Resistant to downy mildew.

(e) Reaction to major pests : Not tested

(f) Agronomic features :

- (i) Lodging : Average resistance to lodging
- (ii) Drought and salinity : Does well under drought, not tested for salinity.
- (iii) Suitable for early or late plantings : Both early and late
- (iv) Plant population : 130,000/ha
- (v) Fertilizer response : Good
- (vi) Seed rate : 3 kg/ha.
- (vii) Intercrop response : Not tested

(g) Quality of produce : Good

Description of the male-sterile line 841A. (Female parent)

(a) Plant height : 73-164 cm.

(b) Distinguishing morphological characters :

- (i) Leaf : Mostly hairy leaf sheath
Mostly hairy leaf blade (> 97% plants)
- (ii) Stem : Mostly hairy (> 97% plants)
- (iii) Ear Head : Anther, colour mostly creamy (light yellow), some light purple. Head shape cylindrical. Bristles protruding by up to 4 mm from the head to be present on all the plants, but the expression of this character is dependent on environment. In some environments bristles are not present in most of the heads.
- (iv) Glumes : Normal

(c) Maturity (range in number of days) : 85-99

(d) Reaction to major diseases : Resistant to downy mildew.

(e) Reaction to major pests : Not tested.

(f) Agronomic features :

- (i) Lodging : Non-lodging
- (ii) Drought and salinity : Not tested.
- (iii) Suitable for early or late plantings : Both
- (iv) Plant population : —
- (v) Fertilizer response : Very good

Description of the Pollinator ICMP 423 (Male parent)

(a) Plant height : 105-209 cm

(b) Distinguishing morphological characters:

- (i) Leaf : Weakly hairy to non-hairy
- (ii) Stem : Weakly pigmented to non-pigmented node.
- (iii) Ear Head : Conical shape
- (iv) Glumes : Mostly purple at maturity

(c) Maturity (range in number of days) : 78-95

(d) Reaction to major diseases : Resistant to downy mildew

(e) Reaction to major pests : Not tested.

(f) Agronomic features

- (i) Lodging : Average resistance to lodging.
- (ii) Drought and salinity : Not tested.
- (iii) Suitable for early or late planrings : Both
- (iv) Plant population : —
- (v) Fertilizer response : Good

Agency responsible for maintaining breeders' stock of parental lines : International Crops Research Institute for the Semi-Arid Tropics, (ICRISAT) Hyderabad.

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3. Crop : Berseem (*Trifolium alexandrium* L.)

Variety : BL-22

Sponsored by : Punjab Agricultural University, Ludhiana.

Parentage with details of its pedigree : Pedigree : Selection from irradiated material of Mescavi.

Description of the variety :

- (i) Plant height : 60 to 65 cm
- (ii) Distinguishing morphological characters : It is a quick-growing variety. It remains green for a longer period and thus supplies green fodder during the scarcity period of May and June. It gives one to two additional cuttings of green fodder as compared to S-99-1 and Mescavi.
- (iii) Maturity (range in number of days seeding to flowering, seed to seed) : Seeding to flower 220—230
Seed to seed 260—270

Agency responsible for maintaining breeder's stock : Punjab Agricultural University, Ludhiana.

4. Crop	:	Castor (*Ricinus communis.*)
Name of Hybrid	:	Gujarat Castor Hybrid-4 (GCH-4)
Sponsored by	:	Gujarat Agricultural University, Junagadh.
Parentage	:	Female parent VP—1 Male parent 48—1

Description of the hybrid (GCH-4):

(a) Plant height upto main spike	:	60-65 cm
(b) Distinguishing morphological characters :		
(i) Leaf	:	Flat type
(ii) Stem	:	Red
(iii) Earhead	:	Long conical with medium spiny capsules.
(iv) Bloom	:	Triple
(v) Seed	:	Bold in size and light down in colour
(c) Maturity (Range in No. of days)	:	110-115 days maturity of main spike. 180-215 days maturity of whole plant.

Description of VP-1 (*Female*) *and* 48-1 (*Male*) :

Sr. No.	Observation	VP-1 (Female)	48-1 (Male)
(1)	Days to 50% flowering	45-50	52-58
(2)	Maturity days of M. Spike	90-100	100-110
(3)	Maturity days of whole plant	190-210	200-215
(4)	No. of inter nodes upto M. spike	12-20	16-22
(5)	Length of M. spike (cms)	60-65	50-55
(6)	Capsule on M. spike	60-70	55-65
(7)	Height upto M. spike (cm)	30-36	65-70
(8)	No. of effective branches/plant	5-10	8-13
(9)	1000 seed weight (gms.)	240-260	260-280
(10)	Oil content %	48.5	48.5
(11)	Seed colour	Brown	Yellowish brown
(12)	Stem colour	Green	Red
(13)	Nature of capsules	Spiny	Non-spiny
(14)	Bloom	Triple	Double
(15)	Leaf shape	Cup	Flat
(16)	Nature of shoot	Conversing	Diversing
(17)	Internodes	Short	Long

Agency responsible for maintaining breeder's stock of parental lines	:	Research Scientist (Oilseeds) Gujarat Agricultural University, Junagadh.

5. Crop	:	Cauliflower (*Brassica oleracea* var. *botrytis* L.)
Variety	:	Pusa Snowball K-1
Sponsored by	:	I.A.R.I., Regional Station, Katrain (Kulu Valley), H.P. Pin-175 129.
Parentage with details of its pedigree	:	A Selection from an exotic line (EC 12012) introduced in sixties.
Description of the variety	:	Light green foliage with puckered margin covering the curd very tightly Retentive snow white curds slightly raised in the centre. Resistant to black rot under field conditions.
Maturity in number of days from sowing for transplanting and 50% harvest	:	118 to 141 days from sowing to first harvesting. About a week late in maturity than previously recommended varieties of this group, Pusa Snowball-I.
Season for which recommended	:	September to October in the hills and October to November in the plains.
Agency responsible for maintaining breeder's seed stock	:	IARI, Regional Station, Katrain, (Kulu Valley) H.P. 175 129.

6. Crop	Cauliflower (*Brassica oleracea var botrytis*)
Variety	Pusa Shubhra
Sponsored by	Division of Vegetable Crops, IARI, New Delhi-110 012.
Parentage with details of its pedigree	Resistant parent — MGS-2-3 Susceptible parents — 15-1-1 and D—96
Description of the variety	Plants of this variety are tall with some what long-stalk and light bluish green leaves, slightly twisting backwards from the middle of the leaf Curds medium, somewhat flat, compact white, each weighing about 700-800g should be harvested when ready as it has a tendency to grow loose; highly tolerant against riceyness. Resistant to black rot caused by *Xanthomonas campestris*.
Agency responsible for maintaining breeder's stock	Division of Vegetable Crops, IARI, New Delhi.

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7. Croup	Carrot (*Daucus carota* L.)
Variety	Pusa Yamdagni
Sponsored by	I.A.R.I., Regional Station, Katrain (Kulu Valley), H.P.
Parentage with details of its pedigree	Selection from a cross of EC 9981 × Nantes, both temperate types. The cross was attempted to combine the quick growing habit of EC. 9981 and self coloured core character of Nantes.
Description of the variety	The new variety has 14-16 cm long cylindrical, semi-stumpy to stumpy roots (with medium tops and self-coloured core. Due to low temperature sometimes the exposed portion of root above the ground have purple tinge. Takes about 86 to 130 days from sowing to root formation.
Agency responsible for maintaining breeder's stock	IARI, Regional Station, Katrain (Kulu Valley) H.P.

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8. Crop	Guar
Variety	HG 258 (HFG 258)
Sponsored by	Director of Research, HAU, Hissar.
Parentage with details of its pedigree	The variety HFG 258 is a selection from genetic stock being maintained in the Department of Haryana Agril. Universtiy.
Description of the variety :	
(a) Plant height (cm)	110-115 cm.
(b) Distinguishing morphological characters	This variety is branched with pubescent leaves having smooth margin. Pods are medium in length. The seed colour is white and round in shape.
(c) Maturity (range in number of days) seedling/ transplanting to flowering seed to seed	110-125 days (seed to seed) depending upon the type of soil and climate.
Agency responsible for maintaining breeder's seed stock	Department of Plant Breeding, Haryana Agril. University, Hissar.

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9. Crop	Gram (Kabuli) (*Cicer arieitinum* L.)
Variety	Pusa 267 (BG 267)
Sponsored by	Head, Genetics Division, IARI, New Delhi.
Parentage with details of its pedigree	The variety has been evolved from a triple cross, (US613 × BEG 482) P9623, having two 'desi' types and one 'kabuli' types in its parentage. Pedigree method of selection was used for handling this cross. Subsequently, promising advance generation material was tested in multilocation station trials.
Description of the variety :	
Growth habit	Semi-erect
Leaf characters :	
Simple/Compound	Compound
Shape of leaf pinnae	Ovate
Colour	Green
Pubescent/glabrous	Pubescent
Stem colour	Light green
Flower colour	White
Pod	Slightly elongated
Seed	Salmon white

Agronomic traits :

Days to 50% flowering : 85-100

Days to maturity : 140-155

Plant height (cms) : 50-55

No. of Primary branches : 3-7

Pods per plant : 50-65

Length of the pod : N.A.

No. of seeds per pod : 1.6

100-seed weight (g) : 19-21

Grain yield per hectare (q/h) : 20-30

Harvest index : N.A.

Disease reaction : Multiple field resistance to wilt, blight, root rot & stunt.

Agency responsible for maintaining the breeder's seed stock : The Division of Genetics, IARI, New Delhi.

10. Crop : Linseed (*Linum usitatissimum* L.)

Variety : Kiran (RLC-6)

Sponsored by : (a) All India Coordinated Research on Oilseeds, ICAR, New Delhi.
(b) Indira Gandhi Krishi Vishwa Vidyalaya, Raipur (MP).

Parentage with details of its pedigree : It is a selection from cross (R-1 × Afg-8) × R-1)

Description of the variety :

(a) Plant height : 50 cm (± 4 cm), plant erect and medium in plant height.

(b) Distinguishing morphological characters : (1) Stem with light anthocynin & pigmentation.
(2) Flowers light blue in colour with petal overlapping.
(3) Seed medium in size and brown in colour.

Maturity (range in No. of days) : (1) Sowing to flowering : 52-57
(2) Seed to seed : 120—126

Agency responsible for maintaining breeder's seed stock : Scientist (Oilseeds), Department of Plant Breeding & Genetics, Indira Gandhi Krishi Vishwa Vidyalaya, Raipur (MP)-492 012.

11. Crop : Linseed (*Linum usitatissimum* L.)

Variety : Jeewan (DPL-21)

Sponsored by : Himachal Pradesh Krishi Vishwa Vidyalaya, Palampur.

Parentage with details of its pedigree : DPL-21 is a selection from a cross between Summit × LC216.

Description of the variety :

(a) Plant height : (i) Total 95 ± 5 cm.
(ii) Technical 75 ± 5 cm.

(b) Distinguishing features : Plant erect; tall; low in tillering; medium secondary branching; uniform maturity; seed brown coloured, medium in size; flowers blue coloured.

(c) Maturity : 175-180 days, under Kangra conditions.

Agency responsible for maintaining the breeder's seed stock : Plant Breeder (Oilseeds),
Oilseeds Research Station, Kangra. H.P.

12. Crop : Sugarbeet (*Beta vulgaris* L.)

Variety : IISR Comp-1

Sponsored by : Indian Institute of Sugarcane Research (ICAR), Lucknow.

Parentage : The components of this composite are : Ramonskaya, Dobrovicka-C, AJ-3 and US-75.

Description of the variety :

Ploidy : Diploid, (2 × 18), multigerm variety, self fertile.

Germinability : Very good germination in normal as well as cold climate.

Plant Habit : Semi spreading

Root shape : Big radish shape, smooth.

Crown size : Small

Fangyness : Very low

Root yield : 45-60 t/ha.

Sucrose % : 14-15%

Juice purity : High juice purity

Gross sugar : 7.25 to 9 t/ha.

Seed production potential : Very good seed production under open pollinated conditions.

Agency responsible for maintaining breeder's seed stock : Indian Institute of Sugarcane Research Lucknow.

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13. Crop : Sugarbeet (*Beta vulgaris* L.)

Variety : Pant S-10

Sponsored by : G.B. Pant University of Agril. and Tech., Pantnagar (Nainital)

Parentage : Selection from KWS-E a genetically broad based population.

Description of the variety :

Plant habit : Semi spreading.

Root shape : Spindle, smooth.

Crown size : Small

Fanginess : Very low

Disease reaction : Tolerant to cercospora leaf spot and sclerotium root rot.

Root yield : 50-55 m tonnes/ha.

Sucrose % : 14.5—15%

Gross sugar yield : 7.25—8.25 tonnes/ha.

Agency responsible for maintaining breeder's seed stock : G.B. Pant University, of Agril. & Technology, Pantnagar.

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14. Crop : Tomato

Variety : Pusa Gaurav (S-152)

Sponsored by : Divn. of Vegetable Crops,
Indian Agril. Research Institute,
New Delhi.

Parentage with details of its pedigree : Derived from a segregation breeding lines of cross between Glamour & watch

Description of the variety :

(a) Distinguishing morphological characters : Determinate, cut leaves light-green foliage, fruit yellow stem and smooth oblong, two-locules, uniform ripening.

(b) Maturity in number of days from sowing to first harvest. :
(i) 85-88
(ii) 50% harvest 100 110

Agency responsible for maintaining breeder's seed stock : Divn. of Vegetable Crops, I.A.R.I., New Delhi.

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15. Crop : White yam (*Dioscorea rotundata*)

Variety : Sree Priya (U 195 (2))

Sponsored by : Central Tuber Crops Research Institute, Trivandrum.

Parentage with details of its pedigree : This is a superior selection from the open pollinated seeds (about 3500 seeds) of the variety Umidika received from I.I.T.A., Nigeria, At present it is in the 10th clonal generation.

Description of the variety :	
(a) Plant height	Climber, 4-5 meters long.
(b) Distinguishing morphological characters	Vine, climbing on support, twining in clock-wise direction, stem spiny, ash green in colour, leaves cordate, dark green with wavy margin; tubers cylindrical, smooth with brown skin and white flesh.
(c) Maturity	300 days.
Agency responsible for maintaining breeder's seed stock	Central Tuber Crops Research Institute, Trivandrum.

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16. Crop	White Yam (*Dioscorea retundata*)
Variety	Sree Subhra (I-146)
Sponsored by	Central Tuber Crops Research Institute, Trivandrum.
Parentage with detalils of its pedigree	This is a superior selection from the open pollinated seeds (about 3500 seeds) of the variety. Two received from I.I.T.A., Nigeria. At present it is in the 10th clonal generation.
Description of the variety :	
(a) Plant height	Climber, 4-5 meters long.
(b) Distinguishing morphological characters	Vine climbing on support, twining in clockwise direction, stem spiny green with cordate light green leaves tubers cylindrical, partly hairy with brown skin and white flash.
(c) Maturity	300 days.
Agency responsible for maintaining breeder's seed stock	Central Tuber Crops Research Institute, Trivandrum.

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17. Crop	Bajra (*Pennisetum typhoides* (Burm) S. & H.)
Variety	HHB-50
Sponsored by	Haryana Agril. University, Hissar/All India Coordinated Millets Improvement Project, College of Agriculture, Pune-411 005.
Parentage with details of its pedigree	MS 81A × H90/4-5
Description of Hybrid	HHB-50
(1) Plant height (cm)	200 to 220
(2) Distinguishing morphological characters	High tillering, medium stem, 27-30 cm long dense pointed heads, medium bold grain size
(3) Maturity (range in No. of days)	Seeding to flowering 47-50 days seed to seed 78-80 days
(4) Reaction to major disease (in field and under controlled conditions)	Highly resistant to malady downy mildew.
Description of male sterileline 81-A (Female parent) :	
(a) Plant height	75-80 cm
(b) Distinguishing morphological characters	Leaf : Narrow, very dense canopy. Stem : Thin, Semi-spreading type, internodes fully covered with leaf sheath and not visible. Sturdy plant type. Ear Head : Thin, slightly taping towards the tip, non-bristled, compact, well exerted. Glumes : Brown and small. Seed : Light grey, round, about 7 g per 1000 seeds. Maturity (range in No. of days) : 85-90 days Reaction to : Resistant to downy mildew major diseases.
Description of Male parents of H-90/4-5 :	
(1) Height	Medium
(2) Tillering	High
(3) Stem thickness	Medium thin
(4) Leaves	Medium
(5) Leaf color 50% flowering (days)	Green-45-50
(6) Ear length	About 18 cm
(7) Ear shape	Typical Lanceolate.
Agency responsible for maintaining breeder's seed stock	Male (H 90/4-5 HAU, Hissar.) (Female (MS 81A : ICRISAT)

18. Crop : Barley

Variety : BHS 169

Sponsored by : I.A.R.I., New Delhi

Parentage with details of its pedigree : Kailash × Briggs
BH 258-3-1-1-1
The variety was developed from a single cross Kailash × Briggs following the pedigree method of breeding

Description of the variety :

(a) Plant height : 100 cms.

(b) Distinguishing morphological characters : Six-rowed, hulled, medium dense ears, awned with white awans, Semi-drooping ear head.

(c) Maturity (range in No. of days) : Seeding/Transplanting to flowering : 156 days
Seed to seed : 188 days.

Agency responsible for maintaining the breeder's seed stock : IARI, Regional Station, Tutikandi, Shimla-4.

19. Crop : Cotton (*Gossypium hirsutum* Linn.)

Variety : Kanchana (LPS 141/JGL 14515)

Sponsored by : (1) Andhra Pradesh Agricultural University, (APAU), Lam, Guntur.
(2) Central Institute for Cotton Research (CICR), Coimbatore.

Parentage : LPS 141 is a reselection from JGL 14515. The original culture JGL 14515 traces its origin to the first 3-way cross involving co-ano (Surat), C. 1998 (USSR) and Reba B. 50 (Central Africa), followed by a series of crosses involving 320F (Punjab) and Acala glandless (USA)

Description of the variety ,

Plant height : 100-170 cm

Habit : Medium to tall with short internodes, open type somewhat determinate, with 1-2 monopodia, 15-25 sympodial branches.

Stem : Pinkish green, very slightly hairy.

Leaves : Medium broad, 4-5 lobes with pointed lobe ends, dark green and glabrous.

Flower : Corolla pale yellow to yellow, anther-cream and petal spot absent.

Bolls : Mature bolls round and fairly big, 4-5 locules, boll weight 4.5 - 5.0 g.

Seeds : Medium, fuzzy

Duration of crop (Seed to seed) : 160 - 170 days

Agency responsible for maintaining the breeder's stock : (1) Breeders of Regional Agril. Research Station, Lam, Guntur.
(2) Breeders of CICR, Regional Station, Coimbatore.

20. Crop : Guar (*Cyamopsis tetrgonaloba (L.) Taub.*)

Variety : HFG 156

Sponsored by : Haryana Agril. University, Hissar.

Parentage with details of its pedigree : The variety HFG 156 is a selection from genetic stock being maintained in the Department of Haryana Agril. University.

Description of the variety ;

(a) Plant height (cm) : 130 - 140 cm

(b) Distinguishing morphological characters : This variety is branched with pubescent leaves and serrated margin Leaf serration is not as deep as of HFG-119.

(c) Maturity (range in No. of days seeding/transplanting to flowering to seed to seed) : Ready for fodder in 70 days after sowing and matures for seed in 120 days.

Agency responsible for maintaining the breeder's seed stock : Department of Plant Breeding, Haryana Agricultural University, Hissar.

21. Crop : Maize (*Zea mays* L.)

Variety : Arun (A68)

Sponsored by : Head Genetics, Indian Agricultural Research Institute, New Delhi - 110 012.

Parentage of the variety : Developed from several indigenous and exotic early maturing materials through half-sib population improvement method. Some of the materials taken for gene pool were Yugoslavian composite ZPA comp., Arizona, ZPA comp. Anjou 210, Bihar early × Antigua Gr. 2, Hungarian comp. A52-53 Indian locals like Basi, Sathi, Dendevadi, Tokapal, Marwahi, Barasuri-I Kanta, Bhadipur Yellow and PDMS-6 etc.

Description of the variety :

(a) *Plant height and ear height ;*

A summary of plant height and ear height is presented below :

Pedigree	Plant height (cm)	Ear height (cm)	Remarks
A68	175-190	83-95	
Hunius	170-195	72-89	
Local	175-190	79-92	

On an average, A68 possess similar plant height and ear height as those of local and Hunius.

(b) *Grain and cob characters :*

The grains of A68 are orange yellow semiflint and are uniformally placed in straight rows. The ear is medium to large, stout and possesses excellent top filling characters. The ears are enclosed in well developed husk covers.

(c) *Maturity :*

The data on average days to silk in the various trials for the different years are summarised below :

Pedigree	1980	1981	1982	1983	Mean/1984	
A68	50	55	55	55	56	55
Hunius	49	53	53	55	55	54
Local	50 (Diara)	54	55	57	53	54

Agency responsible for maintaining breeder's seed stock : Maize Project No. Gen. 4, Division of Genetics, IARI, New Delhi.

22. Crop : Paddy (*Oryza Sativa L.*)

Variety : Annada CR 222-MW. 10 (IET 6223)

Sponsored by : Director, Central Rice Research Institute, Cuttack - 753 006 (Orissa)

Parentage with details of its pedigree : It is a selection from the cross MTU 15 × Yaikyaku Nantoku (China), the cross was made at Hiratsuka, Japan in 1969 and the selection were carried out at CRRI, Cuttack.

Description of the variety :

(a) Plant height : 110.5 cms.

(b) 1000 grain weight : 22.2 gms.

(c) Grain size : Length : 5.0 mm
Breadth : 2.56 mm
L/B ratio : 1.96 mm

(d) Grain classification : Short Bold (S.B.).

Maturity duration : Seed to seed - 105-110 days under direct seeded and 110-120 days under transplanted conditions.

Reaction to diseases : Blast : Moderately resistant (MR)
BLB : Susceptible
RTV : No information

Reaction to insect pests : G.M. : Susceptible
BPH : — Do.—
Stem borer : Moderately resistant

Agency responsible for maintaining breeder's seed stock : Central Rice Research Institute, Cuttack - 753 006 (Orissa)

23. Crop : Soybean (*Glycine max* XL.)

Variety : Pusa-20 (DS-74-20-2)

Sponsored by : Head, Division of Genetics, IARI, New Delhi - 110 012.

Parentage with details of its pedigree : The variety has been evolved from a straight cross involving two exotic varieties viz. Bragg and Lee (both from USA). The pedigree method of selection was used for handilng the cross in the early segregating generations.

Description of the variety :

(a) Plant height	:	Ranges from 45 to 85 cms depending upon location, date of sowing and other ecological factors.
(b) Distinguishing morphological characters	:	Leaves medium in size ; white flowers, tawny pubescence, compact plant, medium bold seeds (14.9 gms/100 seeds), yellow seed coat, black hilum.
(c) Maturity (range in No. of days) seedling/ transplanting to flowering/seed to seed.	:	The variety takes about 105 to 120 days from seed to seed in the Northern Hill Zone depending upon location, date of sowing and other ecological factors. In the Northern Plain Zone it matures about a week earlier.
Agency responsible for maintaining breeder's seed stock.	:	The Division of Genetics, IARI, New Delhi.

ANNEXURE III

Important features of the Varieties recommended for Notification in the 9th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop : Pigeon Pea (*Cajanus cajan* (L) Millsp)

Variety : TTB-7

Parentage : Tur Tuagri × Local field type

Breeder/Institute responsible for maintaining breeder's stock : Professor and Head, Dept. of Agricultural Botany, University of Agril. Sciences, GKVK, Bangalore - 560 065.

Description of variety : 60-75 cm tall, yield 8-10 q/ha, Matures in 145-155 days, Uniform brown seeds. Yellow flowers, open type inflorence. Fits well for intercropping with G. nut suited for May-June planting suited both for vegetable & grain purpose.

Two identifiable and distinguishable morphological characteristics of the variety : Yellow flower colour, 60 to 75 cms height, brown seeds, 4-5 seeds per pod.

Yield :

(a) Commercial production : 8-10 qtls/hect. under rainfed as pure crop.

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2. Crop : Chineses Cabbage

Variety : "CHINI SARSON"

Parentage : Selection from heterozygous material from Srinagar.

Breeder/Institute responsible for maintaining breeder's stock : Dr. S.K. Arora, Olericulturist, Department of Vegetable Crops, Landscaping & Floriculture, P.A.U., Ludhiana.

Description of variety : New leafy vegetable for 'Saag'. Non-heading type with light green broad puckered leaves. Semi erect plant habit. Mid-rib is whitish succulent and tender. 6-8 cuttings can be had. It takes 30 days to first cutting.

Two identifiable morphogloical characteristics of the variety :
(1) Broad puckered leaves with semi erect plant habit
(2) Mid-rib is whitish succulent and tender

Yield : 385 qts/ha.

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3. Crop : Cowpea (*Vigna unguiculata* (L) Walp)

Variety : KBC-1

Parentage : Cross between Iran Grey and pale green

Breeder/Institute responsible for maintaining breeder's stock : Sr. Scientist, AICIP (Pulses), G.K.V.K., Bangalore.

Description of variety : Erect, thick green glabrous leaves, hastate shape, stout green stem, pink flower and ovoid seed shape.

Two identifiable and distinguishable morphological characteristics of the variety : Lengthy peduncle with upright pod bearing habit

Yield : 11.8 q/ha.

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4. Crop : Cowpea (*Vigna Unguiculata* (L) Walp)

Variety : TVX-Cowpea (TVX-944-026)

Parentage : Introduction from Nigeria.

Breeder/Institute responsible for maintaining breeder's stock : Chief Scientist (Dry farming) or Senior Scientist Pulses, GKVK, Bangalore-560 065.

Description of variety : Narrow leaf with trifoliate structure. Indeterminate growth habit with moderate plant pigmentation at the base and tips of petioles.

Two identifiable and distinguishable morphological characteristics of the variety :
(1) Triofolite leaf
(2) Light brown seeds

Yield

(a) Commercial Production : Seed Yield 978 kg/ha.

Crop : Groundnut (*Arachis hypogaea* L.)

Variety : M 335

Parentage : M 13 × F7

Breeder/Institute responsible for maintaining breeder'stock : Dr. K.S. Labana, Senior Scientist (Oilseeds), Dept. of Plant Breeding PAU, Ludhiana.

Description of variety : It is a spreading variety with an average pod yield of 2300 kg per ha and matures in about 124 days which is 10 days earlier than M 13. It has less lateral spread and possesses about 22% more mature pods than M 13. Its shellings is 67% with a 100-kernel weight of 71 gm. It contains 49% oil in its kernels which have a light brown testa.

Two identifying and distinguishable characteristics of the variety :

(i) M 335 has less lateral spread, number of primary and secondary branches than M 13 but possesses more mature pods. Leaflets are large and dark green in colour.

(ii) The pods have thick shell with prominent reticulation and shallow constriction.

(iii) Possesses slightly bolder kernels which have light brown testa.

Yield :

(a) Commercial Product : —

(b) Avg. seed yield : 2300 kg pods per hectare.

Crop : Groundnut (*Arachis hypogaea*)

Variety : GG-11

Parentage : M-13 × GAUG - 10

Breeder/institute responsible for maintaining breeder' stock : Research Scientist (Oilseeds), GAU, Junagadh (Gujarat).

Description of variety/hybrid : It is a spreading type of groundnut developed through hybridization from the cross (M-13 × GAUG-10). Plant height is 25 to 30 cm, leaflets are oblong in shape, leaflet size bigger than GAUG-10 (5.84 × 2.61 cm length and breadth). Foliage colour is dark green. Pods bigger than GAUG-10 (100 pods wt. is 104 grams against 80 gms of GAUG-10). Pods having mostly two seeds, kernles are bold HPS type bigger than GAUG-10. 100 kernels wt. is 49.9 gram against 37.8 gms of GAUG-10 . Kernels elliptical in shape and rose in colour. Days to flowering 25 to 30 and matured in 110 to 114 days.

Two identifiable and distinguishable morphological characters of the variety : It is a spreading type with good branching, leaflets are oblong and leaf size bigger than GAUG-10 pods are bigger than GAUG-10. Moderate beak and moderate reticulation and pod constriction slight. Kernels are elliptical and bold HPS type bigger than GAUG-10 and rose in colour.

Yield :

Commercial product pods kg/ha :

GG-11	*GAUG*-10	*Remarks*
1419	1363	Rainfed condition - 14% increase over GAUG-10
1916	1532	Pre-monsoon sowing-25% increase over GAUG-10.

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7. Crop : Groundnut (*Arachis hypogaea L.*)

Variety : VRI. 1

Parentage : Extract of a cross TMV 7 × FSB 7-2

Breeder/Institute responsible for maintaining breeder's seed : Regional Research Station, Vridhachalam, South Arcot District.

Description of the variety :

Description : VRI-1

Botanical type : Spanish bunch

Branching : Sequentially branching type

Habit : Bunch

Stem	Medium thick. Light green in colour
Leaf	Medium thick, light green foliage, oblong elliptic
Flower	Standard orange coloured Grade-III at peripheral one fourth, yellow within, purple veins, radiating from the base.
Peg thickness	Medium
Pod size	Medium bold, clustered at base
Number of seeds per pod	1-2 seeded, mostly two seeded
Pod beak	Prominent
Pod constriction	Medium to deep
Pod reticulation	Moderately distinct
Shell thickness	Thin
Kernel size	Medium bold, plumpy
Seed coat colour	Light rose
Duration	100 - 105 days
100 kernel weight	36 g.
Oil content	48.14 per cent
Shelling out turn	74.4 per cent
Natural test weight	267.5 g.
1000 pod weight	840 g.
Two identifiable and distinguishable morphological characters of the variety	(1) The pods are long with medium to deep constriction (2) Prominant beak
Yield of Pods :	
Rainfed	1590 kg/ha.
Irrigated	1877 kg/ha.

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8. Crop	Maize (*Zea mays.* L.)
Variety	VL Makka-41 (tested under the name of VL 41)
Parentage	VL Makka-41 is a composite variety which has been developed by bulking equal quantity seeds of the following materials harvested from the two station trials conducted during *kharif* 1979, *viz.*, varietal hybrids and locals from U.P. hills : (1) Lansdowne Local × Diara (Original) (2) Lansdowne Local × A 54 (EU) (3) Lansdowne Local × VL 42 (4) Lansdowne Local × VL 1 (5) M 2 × Diara (O) (6) M 2 × G 2 (7) M 2 × VL 42 (8) M 2 × A, 54 (EU) (9) Diara (O) × VL 42 (10) Khankara local (11) Tehri local (12) VL 42
Breeder/Institute responsible for maintaining breeder's stock	Vivekananda Parvatiya Krishi Anusandhan Shala (ICAR), Almora-263 601 U.P.
Description of variety	Plants shorter in height (185-190 cm), Leaves medium in length and width green in colour with whitish mid rib. Tassels medium sized, open; glume colour green to purplish, another mostly purple few pale green. Silk colour varies from light to dark purple. Ears medium in length and girth, cylindrical with tapering ends, grain round, medium in size and yellow flint. Cob wood colour white. Maturity period 80-85 days under mid hill conditions.
Two identifiable and distinguishable morphological characters of variety	(1) Silk colour light to dark purple (2) Shortest maturity duration as compared to all other strains released for U.P. hills. (3) Short plant stature and medium length and width of the leaves (4) Yellow flint grains of medium
Yield :	
(a) Commercial Product	30 q/ha.
(b) Seed	30 q/ha.

9.	Crop	Rice (*Oryza sativa* L.)
	Variety	IET 7191
	Parentage	R.P. 5-32 × Pankaj
	Breeder/Institute responsible for maintaining breeder's stock	Rice Breeder, Regional Research Station, Mandya.
	Description of variety	It is a semi tall variety growing upto 82-85 cm with green stem medium slender grains.
	Two identifiable and distinguishable morphological characteristics of the variety	(a) Plant height of 82-85 cm with Green stem (b) Medium slender grains with amber colour
	Yield :	
	Commercial Product :	
	(a) Grain	4.0 to 5.0 tons/ha.
	(b) Straw	4.0 to 5.0 tons/ha.

10.	Crop	Rice (*Oryza sativa L.*)
	Variety	PR 109
	Parentage	Single plant selection of line IR 28224-66-3-2 of cross IR 19660-73-4/IR 2415-90-4-3-2/ IR 5853-162-1-2-3 and designated as IR 28224-66-3-2-1
	Breeder/Institute responsible for maintaining breeder's stock	PAU, Ludhiana.
	Description of variety	It is an erect leaved, short statured and stiff strawed variety. The grains are long, slender and transluscent. It takes 130-135 days from seeding to maturity.
	Two identifiable morphological characteristics of the variety	(a) The leaves are erect and dark green (b) It is dwarf variety with average plant height of 110 cm (c) The grains are awnless
	Yield :	
	(a) Commercial Product	6500 kg paddy/hec.
	(b) Seed	

11.	Crop	Radish (*Raphanus sativus L.*)
	Variety	Pusa Chetki
	Parentage	Selection from the material obtained from Denmark at I.A.R.I.
	Breeder/Institute responsible for maintaining Breeder's stock	Dr. J.S. Hundal, Assoc. Prof. of Vegetables, Department of Vegetable Crops Landscaping and Floriculture, Punjab Agricultural University, Ludhiana.
	Description of variety	Roots are medium long, thick and stumpy, mildly pungent. Root/leaf ratio is 1:44. Good seed producing ability under Punjab conditions.
	Two identifiable morphological characteristics of the variety	Leaf with complete lamina, root with rat tail end
	Yield	280 qt/ha.

12.	Crop	Radish (*Raphanus sativus L.*)
	Variety	Punjab Ageti
	Parentage	Punjab Sufed × Local Red
	Breeder/Institute responsible for maintaining breeder's stock	Dr. J.S. Hundal, Assoc. Prof. of Vegetables, Department of Vegetable Crops Landscaping and Floriculture, Punjab Agricultural University, Ludhiana.
	Description of variety	Longer roots (25.6 cm) with medium thickness. Roots are less pungent. Leaf is of medium size with cut lamina. Root/leaf ratio is 1:47. Good seed producing ability under Punjab conditions.
	Two identifiable morphological characteristics of the variety	(1) Roots half red and half white tapering, leaf with cut lamina
	Yield	350 qt/hec.

13. Crop : Ragi *Eleusine corcane(L)*

Variety : INDAF-9 (Chitta)

Parentage : K-1 × IE 980-R

Breeder/Institute responsible for maintaining breeder's stock : Ragi Breeder, Regional Research Station, V.C. Farm, Mandya

Description of variety :

Characteristics of improved Ragi variety (Indaf-9)

Sl. No.	Characters	Indaf-9
1.	Released from and year	RRS. V.C. Farm, Mandya 1985
2.	Parentage	K1 × IE 980-R
3.	Growth habit	High initial vigour
4.	Plant height in cms	100 - 110 cms
5.	Leaf colour	Dark green
6.	Days to 50% flowering	65 - 70 days
7.	Days to maturity	100 - 110 days
8.	Pigmentation	Purple pigmentation
9.	Earhead type	Open with top incurving
10.	Recommended season	All season expect early kharif
11.	Yield potential	3500 kgs/ha. (Dryland)
12.	Reaction to blast	4500 kgs/ha. (Irrigated)
13.	Reaction to virus	Tolerance
14.	Reaction to salinity	Suitable

Two identifiable and distinguishable morphological Characteristics of the variety : Purple pigmentation at leaf juncture and earheads. Dark green broad long leaves.

Yield : Grain : 3500 Kgs/Ha.

(a) Commercial products : Straw : 7000 Kgs/ha.

14. Crop : Sesamum (*Sesamum indicum* L.)

1. Variety : TC 289

2. Parentage : Pb. Til No. 1 × EC 4619

3. Breeder/Institute responsible for maintaining Breeder's stock : Dr. K.S. Labana, Senior Scientist (Oilseeds), Dept. of Plant Breeding, PAU Ludhiana.

4. Description of variety : It has an average yield of 600 kg per ha. and maturity is at par with Pb. Til No. 1. Has bold seeds with an average oil content of 51.6 percent.

5. Two identifying and distinguishable characteristics of the variety :

(i) It has compact top branching and medium height.

(ii) The capsule bearing is dense in single form per leaf axil, dark green and slightly hairy.

(iii) It is a white and bold seeded variety with high oil content of 51.6 per cent, having five per cent more linoleic acid an essential fatty acid than Pb. Til No. 1.

6. *Yield* :

(a) Commercial

(b) Avg. seed yield : 600 kg per ha.

15. Crop : Field Peas (*Pisum sativum L. var arvense (L) Pair*)

Variety : Aparna/(HFP-4)

Parentage : T 163 × EC 109196

Breeder/Institute responsible for maintaining breeder's stock : Senior Scientist (Pulses), Department of Plant Breeding, HAU, Hisar.

Description of variety : The variety is leaf less with normal sized stipules, double poded and having 60-70 cm height. The variety is suitable for irrigated areas of Haryana. It is tolerant to powdery mildew and leaf minor insect. It escapes frost due to its late poding. The seed is round and medium bold (23.2 gms/100 Seed).

Two identifiable and distinguishable morphological characteristics of the variety	(1) It is leafless variety. The leaves are modified into tendril. (2) It is dwarf in height (60-70) cm with short internodes.
Yield	It gave an average 26 q/ha as compared to 17 q/ha yield of T 163 during the five years of testing.

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16. Crop	Triticale (*X Tritico secale*)
Variety	TL 1210
Parentage	(Cinnamon-Raj 821) (Maya II-Turkey 60)
Breeder/Institute responsible for maintaining breeder's stock	Punjab Agricultural University, Ludhiana
Description of the variety	TL 1210 is a single dwarf cultivar with fully bearded dull white ears. It matures in 135 days and is 5 and 2 days earlier in heading and maturity than Sonalika. It has light red medium hard grains.
Two identifiable and distinguishable morphological characteristics of the variety	TL 1210 has light red medium hard grains. Its plant height is 108 cm and has drooping leaves and ears.
Yield	
(a) Commercial produce	18 Q/acre under late-sown conditions

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Proceedings of the Tenth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 24th March, 1988 under the Chairmanship of Dr. R. S. Paroda, Dy. Director-General (CS), ICAR, Krishi Bhavan, New Delhi

The list of the participants is appended at Annexure I.

2. The Chairman welcomed the members and stated that the role assigned to the Committee is very important. The recommendations of the Committee have considerable bearing on the future varietal profile to be adopted in various crops. A specific target of foodgrain production has to be achieved by the terminal year of the Seventh Five Year Plan. It has also been envisaged that the increase in food production will be achieved in selected crops, namely, paddy, wheat, maize, gram and arhar in selected areas in different states, depending on the potential for achieving such increase in agricultural production. The seeds of the new varieties will have to play an important role to achieve the immediate and future targets of the foodgrain production. Therefore, the Committee deliberations are very important so that good and promising varieties are recommended for release and notification. This would help the seed industry to take up the certified seed production of new varieties.

3. The Chairman also suggested the following:

(i) the proposal for release and notification should be submitted in new proformae specified for this purpose. A copy of the new proformae may again be circulated to all concerned with the directive to use the same in future;

(ii) copies of the new proformae may also be made available to Dr. G.L. Kaul, ADG (Horticulture) to suggest modifications in view of requirements of perennial crops; and

(iii) incomplete proposals need not be put up to the Committee and the same be returned to the sponsoring authority for required modifications.

4. After this, the regular Agenda Items were taken up for discussion and the position in respect of each item is indicated below:

Item No. 1: Confirmation of the Minutes of the 9th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 2nd November, 1987.

The Minutes of the 9th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties were confirmed.

Item No. 2: Review of action taken on the Minutes of the 9th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

The position indicated in the Agenda Notes was noted by the Sub-Committee/participants.

Item No. 3: Release of the Variesties.

Thirty seven proposals of various varieties of different crops were considered for release and notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated in various tables given as under:

I. Detail of the varieties recommended only for Release

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Arecanut	Sumangala (VTL-11)	Recommended for Release for cultivation in Arecanut growing area in general and Karnataka (South Kanara) in particular.
2.	Arecanut	Sreemangala (VTL-17)	Recommended for Release for cultivation in Arecanut growing areas in general and Karnataka especially South Kanara in particular.
3.	Sugarcane	Co. 7527	Recommended for Release for cultivation in Gujarat State.
4.	Sugarcane	Co. 62175	Recommended for Release for cultivation in Gujarat State.
5.	Turmeric	Suvarna Selection PCT-8	Recommended for Release for cultivation in Kerala, Karnataka and Andhra Pradesh.

The details of the important features of the above varieties is given in Annexure II.

II. Detail of the varieties recommended for Release for cultivation in the areas indicated against each variety and for Notification throughout the country

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Cowpea	UPC 287	Recommended for Release for cultivation in Gujarat, Rajasthan, Maharashtra, M.P., Punjab and Bundelkhand region of U.P.
2.	Mungbean	*PDM 11	Recommended for Release for cultivation in NEPZ in spring season and EZ in summer season.
3.	Mungbean	*PDM 54	Recommended for Release for cultivation in North Eastern Plain zone in summer season.
4.	Groundnut	ICGV 87128 (ICGS 44)	Recommended for Release for cultivation in Rabi/summer season in Gujarat.
5.	Groundnut	Girnar-1 (CGC 4018)	Recommended for Release for cultivation in all the spanish bunch growing areas during Kharif season.
6.	Maize	*Navjot (J 684)	Recommended for Release for cultivation throughout Maize growing areas of the country except Zone IV.
7.	Maize	Kiran (J 660)	Recommended for Release for cultivation throughout maize growing areas of the country except Zone I.
8.	Maize	*Mansar (Super Composite I)	(i) Recommended for Release for cultivation for entire Zone I. (ii) The Sponsoring Authority would inform the availability of the total quantity of breeder seed to the Secretariat of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.
9.	Maize	Sartaj	Recommended for Release for cultivation throughout the country under irrigated conditions.
10.	Maize	Harsha Composite	Recommended for Release for cultivation during Kharif Season in Zone IV.
11.	Maize	*Renuka (G-25 Comp.)	(i) Recommended for Release for cultivation especially in Project areas and Tank and well irrigated areas where the cropping system warrants short duration crops of three months. (ii) The Sponsoring Authority would inform the exact quantity of the Breeder Seed available to which maturity group the composite belongs.
12.	Maize	VL Makka 88	Recommended for Release for cultivation in Zone I under rainfed conditions.
13.	Sorghum	CSV 13	Recommended for Release for cultivation in all the Kharif Sorghum growing areas.
14.	Sorghum	SAR 1	Recommended for Release for cultivation only in Striga endemic areas of the country.
15.	Wheat	HI 977	Recommended for Release for cultivation in irrigated, high fertility late sown condition of Peninsular Zone.
16.	Wheat	HD 2402	Recommended for Release for cultivation in timely sown, irrigated, good fertility conditions of the far Eastern Zone.
17.	Wheat	HD 2270	Recommended for Release for cultivation for late sown, irrigated, good fertility conditions in NPZ.
18.	Maize	Parbhat	Recommended for Release for cultivation in Zone II and Zone IV in Kharif season.

The details of the Important features of the above varieties is given in Annexure III.

III. Detail of the varieties which could not be recommended for Release and Notification

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Maize	Hans	Kiran and Arun have already been released and are better than Hans.
2.	Maize	Hybrid EH 2123 (Kundan)	(i) The hybrid was deferred to the next meeting. (ii) The Sponsoring Authority would indicate the detail of the parents (male and female). Whether parents are homogeneous or hetrogeneous. In case they are hetrogeneous then procedures for certification of the parents has to be indicated.

***Already Notified under Section 5 of the Seeds Act.**

1	2	3	4
3.	Maize	J 54ZFS4 (Partap Kharif C. 4)	Not recommended for Release because Parbhat is superior in yield and disease resistance.
4.	Maize	J 3022 (Padam)	The Committee recommended that variety should be compared with kiran and Arun and then its proposal might be re-put up for consideration.
5.	Maize	J 2030 (Kesari)	The Committee recommended that more data might be generated on minikit trials and comparison may be made with Navjot. The qty. of breeder seed might be indicated. The proposal may be re-put up alongwith above information.
6.	Maize	Deccan Hybrid Makka - 1	(i) These hybrids should be compared for Zone I and IV respectively against standard released hybrid check for the respective Zone. (ii) They should also be compared with each other for yield, maturity and disease resistance. (iii) The Sponsoring Authorities might re-submit the proposals alongwith the above information.
7.	Maize	V.L. Makka 42	
8.	Maize	MCU 314 (Sharad)	It is not found superior over Ageti-76
9.	Oat	JHO 822 (Bundel Jai)	The proposal might be re-put up with additional agronomic data and forage quality data. It should be compared against latest check.
10.	Wheat	HI-1123	The variety could not be recommended for Release because it is highly susceptible to black rust and has no superiority over Sonalika especially in yield.
11.	Sesamum	N. 62-39 (JGI-1) (Rajeshwari or Swetha)	The proposal is meant only for Release in Andhra Pradesh and hence it should be censidered by A.P. State Seed Sub-Committee. Moreover, it is not recommended by Crop Workshop.
12.	Arhar	Pusa 85	It is a long duration variety & actually a replacement of UPAS 120 is required. Apart from that, recommendation of the Workshop was also not indicated.
13.	Gram	GNG-149	The proposal might be re-put up alongwith the data generated against L-144 and also on agronomic and disease reaction. The specific recommendations of the Workshop might be indicated.
14.	Paddy	BPT-5204 (Samba Mahsuri)	The proposal should be submitted to State Seed Sub-Committee because it is meant for Release only for Andhra Pradesh State. Moreover, it is not recommended by Crop Workshop.

Item No. 4: Consideration of proposals for notification.

19 Proposals of different crop varieties were considered for Notification under Section 5 of the Seeds Act. The decision of the Committee is indicated as under:

IV. Detail of the varieties recommended for Notification under Section 5 of the Seeds Act for entire country

S.No.	Crop	Variety
1.	Gram (Kabuli)	Gora Hissari
2.	Horse gram	Deepali-HPK-6
3.	Arhar	T-7
4.	Bhindi	Punjab-7
5.	Cotton	DS-5
6.	Cotton	RG-8
7.	Cotton	AKH 081
8.	Cowpea	Charodi
9.	Paddy	HKR-120
10.	Paddy	Narendra Dhan-118
11.	Paddy	VL Dhan-163
12.	Sesamum	Tapi (JLT-7)
13.	Sunflower	APSH-11
14.	Safflower	Sagar Mutyalu
15.	Safflower	Malviya Kusum-305

The details of the important features of the above varieties is given in Annexure IV.

V. Detail of the varieties which could not be recommended for Notification

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra	Mukta (RBS-2)	The variety may be tested in All India Coordinated Project and proposal might be re-submitted alongwith data of All India Coordinated Project.
2.	Paddy	Satya	The Chairman may decide the notification of the variety after receipt of the views of the Project Director (Rice).
3.	Paddy	Saleem	--Do.--
4.	Paddy	Mandya Vijaya	--Do.--

ANNEXURE I

List of the Participants who have attended the 10th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held under the Chairmanship of DDG (CS), ICAR, on 24-3-1988

1.	Dr. R.S. Paroda, Dy. Director General (CS) Indian Council of Agricultural Research, Krishi Bhavan, New Delhi.	*Chairman*
2.	Shri B.N. Sehgal, Jt. Director of Agriculture, Delhi Administration, Delhi.	*Member*
3.	Dr. Rajender Singh, Tehlan, Vill. & P.O. Dichaon Kalan, Najafgarh, New Delhi-43.	,,
4.	Shri Birbal, Director of Agriculture, Haryana, Chandigarh.	,,
5.	Shri Prem Singh Gill, Director, Punjab State Seed Certification Authority, Chandigarh.	,,
6.	P. Manickavasagam, Director of Seed Certification, Coimbatore, Tamilnadu	,,
7.	Shri J.N. Johri, Director, Rajasthan State Seed Certification Agency, Jaipur.	,,
8.	Shri B.U. Modi, Director, Gujarat State Seed Certification Agency, Ahmedabad.	,,
9.	Sh. D.V. Singh, Managing Director, M.P. State Seed Certification Agency, Bhopal.	,,
10.	Shri. M.M. Payak, Sr. Scientist, Division of Mycology & Plant Pathology, IARI, New Delhi.	,,
11.	Shri. M. Malakondaiah, Addl. Director of Agriculture and Director State Seed Certification Agency, Hyderabad.	,,
12.	Dr. P.K. Agrawal, Head, Seed Science & Technology, IARI, New Delhi.	,,
13.	Sh. V.N. Puri, Seed Grower, Punjab.	,,
14.	Sh. I.S. Bist, Dy. Secretary (Seeds), Govt. of India, Ministry of Agriculture, Deptt. of Agri. & Coopn., Krishi Bhavan, New Delhi.	*Member Secretary*
15.	Sh. T.S. Sandhu, Jt. Director, Agriculture, Haryana, Chandigarh.	*Others*
16.	Sh. Ajmer Singh, Chief Inspector Fertilizer, Deptt. of Agri., Punjab., Chandigarh.	
17.	Sh. A.V.S. Srinivasan, Addl. Director of Agriculture (Inputs) o/o the Director of Agriculture, Tamilnadu.	,,
18.	Sh. D.S. Charpe, Dy. Director of Agril., Directorate of Seed Certification, Maharashtra, Pune.	,,
19.	Sh. D.C. Thalm, Dy. Director of Agriculture, Himachal Pradesh, Simla.	,,
20.	Sh. B.K. Mukherjee, Sr. Scientist, Division of Genetics, IARI, New Delhi.	,,
21.	Sh. T.G.Rao, Addl. Director of Agriculture, Andhra Pradesh, Hyderabad.	,,
22.	Sh. B. Ram Kumar, Addl. Director of Agriculture, Pondicherry.	
23.	Sh. P. Pandian, Agriculture Officer, Directorate of Agriculture, Pondicherry.	,,
24.	Dr. N.P. Nema, Chief (RD & QC) National Seeds Corporation Ltd., Beej Bhavan, Pusa Complex, New Delhi-110012.	,,
25.	Sh. N.S. Tunwar, Dy. Commissioner (QC&T) Ministry of Agriculture, Deptt. of Agriculture & Coopn., Shastri Bhavan, New Delhi.	,,
26.	Sh. M. S. Shukla, Dy. Seed Officer, Ministry of Agriculture, Shastri Bhavan, New Delhi.	,,

ANNEXURE II

The important features of the Varieties recommended only for Release during 10th Meeting of the Sub-Committee held on 24-3-1988

1. Crop : Arecanut (*Areca catechu* L.)

Variety : Sumangala (VTL-11)

Sponsored by : Central Plantation Crops Research Institute, Kasaragod

Parentage with details of its pedigree : A selection from Indonesia

Description of the variety :

(1) Growth habit : The palm is tall with erect and partially drooping growth habit. The average girth above the fixed mark (50 cm) at the age of 15 to 20 years old palm is 45.92 cm. The average internodal length is 18.72 cm and average number of leaves are 10.16.

(2) Flowering : This variety when grows under the best condition, palm flowers in about 4 to 5 years. The 1st inflorescence appears at the tenth node at a height above 1.52 cm from the ground. The average no. of female flowers 785.90 of 15 to 20 years old palm. The palm starts giving out spadix in the month of December-January.

(3) Fruiting : The average number of nuts is 713.10 per palm/year. Harvesting start from October to March but maximum fruits are harvested during November-December.

(4) Nut characters : The colour of the ripe nuts is deep yellow to orange and is oblong to round in shape and medium size. The average fresh weight of fully matured nut is 30.60 gm. The minimum wt. is 27.8 gm and maximum 38.2 gm.

(5) Kernel characters : The kernel length minimum 2.4 cm and maximum 2.52 cm and average length is 2.50 cm. Kernel minimum breadth 2.31 cm and maximum 3.0 cm and average 2.61 cm. Kernel minimum wt. 7.95 gm. and maximum 14.05 gm. The average kernel weight 13.12 gm. The average kernel dry wt. is 8.8 gm.

Agency responsible for maintaining the breeders stock : CPCRI Regional Station. Vittal. 574243 & CPCRI Seed Garden, Kidu.

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2. Crop : Arecanut (*Areca catechu* L.)

Variety : Sreemangala (VTL-17)

Sponsored by : Central Plantation Crops Research Institute, Kasaragod

Parentage : A selection from Singapore

Description of the variety :

(1) Growth habit : The palm is tall with erect and partially drooping growth habit. The average girth above the fixed mark i.e. 50 cm. at the age of 15 to 20 years is 43.27 cm. The average internodal length is 16.88 cm and average No. of leaves is 10.30.

(2) Flowering : This variety when grown under the best conditions, flowers in about 4 to 5 years. The first inflorescence appears at the 10th node at a height of 1.50 meters from the ground. The average no. of female flowers is 722.96 and 15 to 20 year old palm. The palm starts giving out spadix in the month of December-January.

(3) Fruiting : The average No. of nuts is 673.38 per palm per year ranging from 590.3 to 717.30. Harvesting starts from October to March but maximum fruits are harvested during November-December.

(4) Nut characters : The colour of the nuts is deep yellow to orange and is oblong to round in shape and big in size. The average fresh weight of the fully matured nut is 36.06 gms. ranging from 31.5 gms to 41.2 gms.

(5) Kernel characters : The kernel length ranges from a minimum of 2.50 cm and maximum of 2.80 cm and average length is 2.56 cm. The minimum breadth is 2.70 cm and maximum 2.90 cm with an average of 2.86 cm. Kernel minimum weight is 11.70 gms. and maximum 17.30 gms. The average kernel weight is 14.00 gms. The average kernel dry weight is 9.12 gms.

Agency responsible for maintaining breeders' stock : Central Plantation Crops Research Institute, Regional Station, Vittal-574 243· D.K. Karnataka and CPCRI Seed Garden, Kidu.

3. Crop : Sugarcane (*Saccharum officinarum*)

Variety : Co. 7527

Sponsored by : (1) Gujarat Agril. University, Sardarkrushinagar, Distt. Banaskantha.
(2) All India Coordinated Research Project on Sugarcane (ICAR), Lucknow.

Parentage :
Co. 951 *Co.* 419 *Co.* 443 *Co.* 605
Co. 62175 *Co.* 658
Co. 7527

Breeding method : Crossing and selection work was done at the Sugarcane Breeding Institute, Coimbatore.

Description of the variety :

(a) Plant height (Millable Ht.) : The average millable height is about 263 cm.

(b) Distinguishing morphological characters :
(i) Cane colour : Yellowish white
(ii) Cane thickness : Thick
(iii) Bud groove : Absent
(iv) Root zone : Medium
(v) Node : Cylindrical long
(vi) Ligule : Strep Shaped
(vii) Bud shape : Ovate
(viii) Width of lemina : Medium
(ix) Spines : Absent

Average yield under normal conditions (yield in t/ha) : 119.249 t/ha.

Agency responsible for maintaining the breeder seed : Research Scientist (Sugarcane), Gujarat Agricultural University, Junagarh-362 001.

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4. Crop : Sugarcane (*Saccharum officinarum*)

Variety : Co. 62175

Sponsored by : Gujarat Agricultural University, Sardarkrushinagar, Disst. Banaskantha.

Parentage :
Co. 683 Co. 419 BoJ. 2875 Co. 290 2nd
Co. 957 Co. 419
Co. 62175

Breeding method : Crossing work was done at the Sugarcane Breeding Institute, Coimbatore

Description of the variety :

(a) Plant height (Millable ht.) : The average millable height is about 250 cm. (Range between 217 to 260 cms)

(b) Distinguishing morphological characters :
(i) Cane Colour : Purplish green
(ii) Cane thickness : Thick
(iii) Bud groove : Present, prominent
(iv) Root zone : 2-3 staggered & visible rows of root eyes
(v) Node : Swollen
(vi) Bud size : Prominent
(vii) Bud shape : Triangular to ovate
(viii) Width of lemina : Very broad

Average yield under normal conditions (yield in t/ha) : 106.25 t/ha.

Agency responsible for maintaining breeder seed : Research Scientist (Sugarcane), GAU, Junagarh - 362 001

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5. Crop : Turmeric (*curcuma longa* L.)

Variety : Suvarna (Selection PCT-8)

Sponsored by : Central Plantation Crops Research Institute, Kasaragod, Pin - 670 124

Source of collection : Collected from Assam

Description of the variety :

		Mean	*Range*
(1)	**Height pseudostem (cm)**	69.4	(66.0-72.2)
(2)	No. of tillers	2.6	(1-6)
(3)	No. of leaves/tiller	6.3	(6-8)
(4)	Length of leaf (cm)	66·4	(64.0-71.0)
(5)	Breadth of leaf (cm)	17.4	(14.0-26.7)
(6)	No. of mother rhizome	3.0	(1-5)
(7)	Length of mother rhizome (cm)	4.6	(2.6-5.0)
(8)	Circumference of mother rhizome (cm)	2.8	(2·1-3.3)
(9)	No. of primary fingers	14.8	(9.32)
(10)	Length of primary fingers (cm)	10·4	(7.0 12.0)
(11)	Circumference of primary fingers (cm)	1.7	(1.6-1.9)
(12)	No. of secondary fingers	28·2	(10.50)
(13)	No. of tertiary finger	8.6	(2·15)
(14)	Colour of rhizome : Inner core Outer core		Light orange Dark orange
(15)	Colour of powder		Dark orange
(16)	Rhizome yield (green) in t/ha	Av. Max.	17.4 43.5
(17)	Rhizome yield (dry) in t/ha	Av. Max.	4.6 11.3

Agency responsible for maintaining the breeder seed : National Research Centre for Spices, Calicut.

ANNEXURE III

The detail of important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Tenth Meeting held on 24-3-1988

1. Crop	:	Cowpea (*Vigna unquiculata* L., Walp)
Variety	:	UPC 287
Sponsored by	:	G.B. Pant University of Agriculture & Technology, Pantnagar, U.P.
Parentage	:	CK72-287, a single plant selection from the germplasm line 287 being maintained at Pantnagar.
Description of the variety	:	(a) Plant height : 200-235 cm (b) Distinguishing morphological characters : Erect when young becoming viney when plant becomes 60-65 days old; stem and foliage green; flowers pink; length of peduncle 23-32 cm; pod length 13-17 cm; number of seeds pod 15-20; grain colour pale brown, medium bold, square bean shaped or oblong, 1000 seed weight 167-172 gm. (c) Maturity : 75-80 days to 50% flowering 135-140 days to maturity.
Agency responsible for maintaining breeders seed stock/quantity of breeder's seed stock	:	G.B. Pant University of Agriculture & Technology, Pantnagar, Nainital, U.P Sufficient (10 Qtls.)

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2. Crop	:	Mungbean (*Vigna radiata* L Wilezek)
Variety : (i) PDM 11 (ii) PDM 54	:	The detail of the characters of these varieties is given in Proceedings of the Eighth Meeting at Annexure No. 2 (Sl. No. 16 & 17)

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3. Crop	:	Groundnut (*Arachis hypogaea* L.)
Variety	:	ICGV 87128 (ICGS 44)
Sponsored by	:	ICRISAT
Parentage with details of its pedigree	:	Robut 33-1-1-5B1-B1-B1-B1-B1. (Selection from natural hybrid population of Robut 33-1)
Description of the variety :		
(i) Growth habit	:	Decumbent 2 - Decumbent 3
(ii) Branching pattern	:	Sequential
(iii) Pigmentation	:	Green
(iv) Number of primary & secondary branches	:	4-6 (Average 4.3), 2-4 (Average 2.6)
(v) Leaf Characters :		
(a) Size	:	Medium to small
(b) Shape	:	Elliptic
(c) Colour	:	Dark green
(vi) Flower colour :		
(a) Standard	:	Orange
(b) Cresent	:	Yellow
(c) Cresent marking	:	Orange
(d) Wing petal	:	Yellow
(vii) Pod and seed characters :		
(a) Pod type	:	Small-medium (Spanish type)
(b) Pod beak	:	None-slight
(c) Pod constriction	:	Slight-moderate
(d) Pod reticulation	:	None-slight (Smooth)
(e) Seeds/pod	:	2-1 (mainly 2's)
(f) Pod length	:	26 mm (average of 30 pods; *rabi* season, irrigated crop)

(g) Pod breadth : 13 mm (average of 30 pods; *rabi* season, irrigated crop)
(h) Shelling percentage : 70 (Average: *rabi* season, irrigated crop)
(i) Seed length : 13 mm (Average of 30 seeds; *rabi* season, irrigated crop)
(j) Seed breadth : 9 mm (Average of 30 seeds; *rabi* season, irrigated crop)
(k) 100 seed weight : 60 g (Average, *rabi* season, irrigated crop)
(l) Seed colour : Tan

Agency responsible for maintaining breeder's stock : ICRISAT, Patancheru P.O., Andhra Pradesh-502 324.

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4. Crop : Maize (*Zea mays* L.)

Variety : Navjot- (J 684)

Sponsored by : All India Coordinated Maize Improvement Project.

Parentage with detail of its pedigree : J 684 was developed by carrying out intra population improvement in advance-generation of a cross between Composite Partap (J54) and Composite Tarun (Syn P200 × Kissan).

Description of the variety : J 684 has strong medium thick stem, J 684 is relatively less leafy with narrow erect leaves and leaves above the ear placement is low and tassel is light. J 684 is an early maturing composite.

Ears are cylindrical and are of medium size. Husk covers are well developed. Grains are round, yellow-orange, mostly flint and of medium size.

With respect to plant type, grain colour and grain type, J684 is closer to locals than popular hybrids or composites, like Ganga 5, Ganga 2, Vijay, Ageti 76 etc.

Agency responsible for maintaining breeder's stock : Punjab Agricultural University, Ludhiana.

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5. Crop : Maize (*Zea mays* L.)

Variety : Kiran (J 660)

Sponsored by : All India Coordinated Maize Improvement Project.

Parentage with detail of its pedigree : Twenty one elite Punjab locals were crossed with J650 (developed from Antigua × Repdom -Pop 35 of CIMMYT, Mexico). An equal quantity seed of each of these crosses were bulked, advanced and subjected to intra-population improvement for grain yield, disease resistance and other agronomic traits.

Description of the variety :

(a) Distinguishing morphological characters : It has medium thick stem and leaves are of medium size. Ears are cylindrical and of medium size. Husk covers are well developed. Grains are orange mostly flint and medium round.

(b) Maturity (Range in number of days) : In maize, days to silk are recorded as a index for maturity. J660 takes 57 days to silk in comparison to 55 days of Hunius and locals. J660 matures in about 80 days.

(c) Plant height : J 660 has average plant height (180 cm) and medium ear placement (80 cm.)

(d) Reaction to major diseases : J660 has a good level of resistance to all the major diseases.

(e) Reaction to major pests : J660 has a good level of resistance to maize borer which is the only serious pest on maize.

Agency responsible for maintaining breeder's stock : Punjab Agriculural University, Ludhiana.

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6. Crop : Maize (*Zea mays* L.)

Variety : Mansar (Super Composite I)

Sponsored by : All India Coordinated Maize Improvement Project.

Parentage : This composite was developed by compositing equal quantity of F2 seeds of all possible crosses among composites Vijay, Kissan, Amber and Jawahar; Hybrids Him 123, Ganga 5, VL 54 and Deccan.

Description of the variety : It is a medium maturing variety with orange-yellow semi-flint grain. It flowers in 65-70 days. Husk leaves are well developed and foliage is dark green in colour.

(a) Plant height : Plant height ranges from 207 cm to 239 cm. Ear height from 109 to 137 cm.

(b) Distinguishing morphological characters : It has a well developed medium thick stem with semi erect leaves. Ears are cylindrical and are of medium to large in size with well developed husk Cover. Grains are yellow orange flint.

(c) Maturity : It is a medium maturing variety having the same maturity as that of composite Tarun (85 days).

Agency responsible for maintaining breeder's seed stock : All India Coordinated Maize Improvement Project.

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7. Crop : Maize (*Zea mays* L.)

Name of the Hybrid : Sartaj (EH 210 83)

Sponsored by : All India Coordinated Maize Improvement Project.

Parentage :

Female	*Male*
J6 17-61 (LM-1) ×	H 104-21 (LM-3) ×
H3 191-3 (LM-2)	H 64-15 (LM-4)

Breeding method : The four parental lines were developed through pedigree method. These lines were selected for high general combining ability. Double cross hybrid was synthesized on the basis of predicted performance from evaluation of single crosses.

Description of hybrid :

Plant height : EH 21083 has relatively short plant height (180 cm) and low ear placement (75 cm).

Distinguishing morphological characters : It has relatively strong stem, short plants, and low ear placement which contribute to high degree of lodging resistance. Leaves are narrow and relatively erect above the ear, and tassel is light. Ear are long medium thick and grain are medium bold, yellow-orange flint. It has stay green characteristic.

Maturity :

Seed to seed : 90-95 days

Seed to silking : 58 days

Description of parents of the hybrid :

	J6 17-61	H3191-3	J6 17-61 × H 3 191-3	H 104-21	H 104-15	H 104-21 × H 64-15
(a) Plant height (cm)	75	92	185	70	58	165
(b) Distinguishing morphological characters	Plants less leafy, erect leaves, light tassel, long ears, Dull light oranges flint grains.	Dark green leaves, relatively erect, medium branched compact tassel, long ears, medium bold, yellow-orange (slightly dull) flint grains	Medium tall plants, dark green leaves, medium tassel, thick stem, long ears, yellow-orange flint grains	Profusely branched compact tassel, Ears are thin and have loose kernel rows, small size, shining yellow-orange flint grains. Stay green at maturity	Light tassel with few branches. Ears are thick, short with yellow-orange bold grains, plants stay green at maturity	Short plants, normal green leaves, thin stem compact tassel, medium ears with poor tip filling
(c) Days to 50% flowering	63	68	58	65	66	63
(d) Maturity (range in number of days seed to seed)	103	112	92	105	107	100
(e) Is there any problem of synchronization? If yes, methods to overcome it.	No					

Agency responsible for maintaining breeder's seed : Punjab Agricultural University, Ludhiana.

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8. Crop : Maize (*Zea mays* L.)

Variety : Harsha Composite

Sponsored by : All India Coordinated Maize Improvement Project.

Parentage	:	Intermix of × 102 crosses.
Breeding method	:	This composite was developed by chain crossing the components followed by half-sib population improvement method.
Description of the variety :		
(a) Plant height	:	Ranging from 140 to 216 cm. with an average of 167 cm.
(b) Distinguishing morphological characters :		
Tassel	:	Dense with loose branching.
Glumes	:	Green with purple streaks, purple tip.
Anthers	:	Predominantly creamish yellow 70% with 30% purplish colour.
Silks	:	Predominantly yellow (70%) with 30% purplish colour.
Grain	:	Bold grains, orange-yelllow
Type & Colour	:	Colour ranging from flint to semiflint with yellow cap.
Cob colour	:	Purple to white
Maturity (range in number of days) Seedling/ Transplanting to flowering, seed to seed	:	On an average it takes 57 days. (ranging from 50-63 days in different states) to50% silking. Crop matures in 95 to 100 days on an average in Kharife eventhough it comes to 50% dry husk in 90 days.
Agency responsible for maintaining breeder's seed	:	Maize Breeder Agricultural Research Station, Amberpet, Hyderabad-500 013.
Specific recommendations, if any, for seed production	:	Generally purple tip on the glumes have been observed.

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9. Crop	:	Maize (*Zea mays*, L.)
Variety	:	Renuka (G.25)
Sponsored by	:	Maize Improvement Project, RRS, Dharwad.
Parentage	:	It was developed from G 15 x G 14 cross and was subjected to mass selection.
Description of the variety	:	Short sturdy plant stature, early in duration (90 days) medium sized grains with orange-yellow semi flint texture. Fairly tolerant to major pests and diseases.
Plant height	:	150 to 175 cms. with 60 to 70 cms. ear height.
Morphological characters	:	Broad medium sized leaves with upper leaves slightly erect sturdy stem occasionally prop roots with pink colour. Stem exposed to sun will be with pink to purple colour. Being a composite, silk colour, tassel colour vary from pink to green. Empty cob colour predominantly white with 30 to 40% purple.
Maturity (seed to seed)	:	80 to 90 days during kharif and summer and 95 to 100 days during Rabi.
Agency responsible for maintaining breeder's seed stock	:	Maize Breeder, ARS, Arabhavi-591 318.

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10. Crop	:	Maize (*Zea mays* L.)
Variety	:	V.L. Makka 88 (E.V. III CDY (Alm)).
Sponsored by	:	Director, Vivekananda Parvatiya Krishi Anusandhan Shala (ICAR), Almora-263 601(UP)
Parentage	:	E.V. III CDY (Alm.) is a C_1 (cycle one) experimental variety, developed by half-sib selection in a broad based national pool C-D Yellow (Pool 4).
Breeding method	:	Half-sib selection.
Description of the variety :		
(a) Plant height	:	205-210 cms.
(b) Distinguishing morphological characters	:	Plants shorter in height with healthy stalks. Leaves medium in length and width and dark green in colour. Tassel medium in size, and loose; glume and anther colour varies from light to dark purple, few green. Silk colour also varies from light to dark purple. Ears cyclindrical, medium in length and girth; grain filling up to the tip. Grain colour orange-yellow, texture flint, grains medium sized of round shape. Cob wood colour is predominantly white, with few pinkish. Each plants bears 1 tightly husked ear in the middle.

Maturity (range in number of days)	:	Under mid-hill conditions. 85-90 days.
Agency responsible for maintaining breeder's seed	:	Vivekananda Parvatiya Kri Anusandhan Shala (ICAR). Almora-263 601 (UP) :

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11. Crop	:	Sorghum
Variety	:	CSV 13 (SPV 475)
Sponsored by	:	All India Coordinated Sorghum Improvement Project, Hyderabad-500 030.
Parentage	:	The variety was derived by pedigree selection from a multiple cross involving IS 12622C, 555, IS 3612C, 2219B and E. 35.
Description of the variety :		
(a) Plant height	:	Range 170-180 cm.
(b) Distinguishing morphological characters		
(i) Leaf	:	Medium size and tan coloured.
(ii) Stem	:	Medium thick, moderately juicy, internodes are fully covered, tan coloured.
(iii) Earhead	:	Semi-compact, eliptic shaped, well excerted medium thick peduncle.
(iv) Glumes	:	Straw coloured, short and free threshing.
(v) Seed	:	Medium size (2.5 g 100^{-1}), thick pericarp, light cream colour.
Maturity (range in number of days)	:	110-120 days.
Agency responsible for maintaining breeder's seed	:	ICRISAT, Patancheru-502 324 (A.P.)

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12. Crop	:	Sorghum
Variety	:	SAR 1 (SPV 694)
Sponsored by	:	All India Coordinated Sorghum Improvement Project, Hyderabad-500 030.
Parentage	:	SPV 694 is derived from a cross involving a Striga resistant line, 555, and a high yielding adapted line, 168.
Description of the variety:		
(a) Plant height	:	1.8 to 2.4 m
(b) Distinguishing morphological characters		
(i) Leaf	:	Medium size with dull green mid-rib.
(ii) Stem	:	Tan pigmented, moderately juicy.
(iii) Earhead	:	Semi-compact cylindrical head with long medium thick peduncle.
(iv) Glumes	:	Straw white and free threshing.
(v) Seed	:	Round medium size, light cream colour grains with thin and lustrous pericarp.
(c) Maturity (range)	:	105-115 days
(d) Reaction to major diseases	:	Resistant to *Strida asiatica*. Moderately susceptible to anthracnose, rust and downy mildew. Susceptible to grain molds.
Agency responsible for maintaining breeder's seed	:	International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru-502 324.

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13. Crop	:	Wheat (*Triticum aestivum*)
Variety	:	HI 977
Sponsored by	:	Director, Indian Agricultural Institutes, New Delhi-12.
Parentage	:	Gallo-Aust-61-157 × Cno- No. 66-Y 50E-Kal.
Description of the variety :		
(a) Plant height	:	Double Dwarf (85-90cm)
(b) Distinguishing morphological characters :		
(i) Early growth habit	:	Semi-erect
(ii) Tillering capacity	:	Very good

(iii) Colour of foliage and stem : Green
(iv) Ear Shape : Fusiform
(v) Ear density : Mid-dense
(vi) Awning : Fullly awned.
(vii) Glume colour : Light Brown
(viii) Glume hairiness : Glabrous
(ix) Awn colour : Brown
(x) Fragibility of rachis : Tough
(xi) Threshability : Easy
(xii) Grain colour : Amber
(xiii) Grain Texture : Semi hard
(xiv) Grain size : Medium bold

(c) Maturity (range in number of days) from seeding to flowering, seed to seed : Flowering 70-75 days.
: Maturity 120-125 days.

Agency responsible for maintaining breeder's stock : IARI, Regional Station, Indore-452 001(M.P.)

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14. Crop : Wheat (*Triticum aestivum*)
Variety : HD 2402
Sponsored by : Director, Indian Agricultural Research Institute, New Delhi-12.
Parentage : HD 2267 × HD 2236
(HD 2177 × HD2120/HD 2160 × (HD 2119 × HD 1981).

Description of the variety :

(a) Plant height : 68-94 cms.

(b) Distinguishable morphological features :
(i) Early growth habit : Semi-erect
(ii) Tillering capacity : Very good
(iii) Colour of foliage and stems : Green
(iv) Ear shape : Fusiform
(v) Ear density : Mid-dense
(vi) Awning : Fully awned
(vii) Glume colour : Creamish white
(viii) Glume hairiness : Glabrous
(ix) Awn colour : Creamish white
(x) Fragility of rachis : Tough
(xi) Threshability : Easy
(xii) Grain colour : Amber
(xiii) Grain texture : Hard
(xiv) Grain size : Medium bold.

(c) Maturity (range in number of days). seedling/transplanting to flowering, seed to seed : Early (50-69) flowering

Agency reponsibility for maintaining the breeder's stock : Wheat Breeder, Division of Genetics, IARI, New Delhi-12.

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15. Crop : Wheat (*Triticum aestivum* L.)
Variety : HD 2270
Sponsored by : Director, Indian Agricultural Research Institute, New Delhi-12.
Parentage : HD 1962-E4870-K65/HD2119×Tob-Cno-^{2384}/Naibo. T.T. Son. 64/HD·1954.

Description of the variety :

(a) Plant height : Semi dwarf (85-100 cm)

(b) Distinguishing morphological features :
(i) Early growth habit : Semi-erect
(ii) Tillering Capacity : Very good
(iii) Colour of foliage and stems : Light green

(iv) Ear shape	Fusiform
(v) Ear density	Medium dense
(vi) Awning	Fully awned
(vii) Glume colour	Cream
(viii) Glume hairiness	Glabrous
(ix) Awn colour	Creamish
(x) Fragility of rachis	Tough
(xi) Threshability	Easy
(xii) Grain colour	Amber
(xiii) Grain texture	Hard
(xiv) Grain size	Medium bold
Maturity (range in number of days) seeding/transplanting to flowering, seed to seed	Early (76-86 days) flowering.
Agency responsible for maintaining the breeder's seed stock	Wheat Breeder, Division of Genetics, IARI, New Delhi-12.

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16. Crop	Groundnut (*Arachis hypogaea* L.)
Variety	Girnar-1 (CGC 4018)
Sponsored by	National Research Centre for Groundnut, Junagarh.
Parentage	X 14-4-B-19-B × NCAc 17090.
Description of the variety :	
(a) Plant height	7-8 inches.
(b) Distinguishing morphological characters	Dark green obovate leaflet with glossy texture; foliage remains intact and green even at maturity; pod reticulated and 2-3 seeded.
(c) Maturity	Medium maturity (110 days from seed to seed)
Agency responsible for maintaining breeder's seed	National Research Centre for Groundnut, Junagarh.

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17. Crop	Maize (*Zea mays* L.)
Variety	Parbhat (J-115)
Sponsored by	All India Coordinated Maize Improvement Project.
Parentage	Parbhat (J-115) has been developed by backcrossing Partap (J54) × Suwan 1 with Partap.
Breeding method	Backcross method followed by intra-population improvement (mass selection)
Description of the variety :	
(a) Plant height	J 115 has average plant height (185 cm) and medium ear height (82 cm).
(b) Distinguishing morphological characters	It has average plant and ear height and possesses medium thick stem, medium foliage and medium sized tassel. The grains are yellow orange semi flint.
(c) Maturity (range in number of days)	Seed to seed 95-100 days; seeding to silking : 60 days.
Agency responsible for maintaining the breeder's seed stock	Punjab Agricultural University, Ludhiana.

ANNEXURE IV

Important features of Varieties recommended for Notification

1.	Crop	Arhar (*Cajanus cajan* L.)
	Name of the variety	T. 7
	Parentage	Selection from a local sample from suberbe of Lucknow.
	Breeder/Institute responsible for maintaining breeder's stock	Economic Botanist (Legumes), C. S. Azad University of Agiculture & Technology, Kanpur-2.
	Description of variety	Erect habit, Green pods with dark streaks with 3-5 seeds, seed Brown, bold.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	Erect, habit (compact), Bold pods and Bold seed, 110 gms/1000 seed, Brown in colour, suited for mixed cropping with Urd, Mung, Jowar and Bajra etc.
	Yield :	
	(a) Commercial Product	Seed 16-20 Q/ha.
	(b) Seed	16-20 Q/ha.

2.	Crop	Okra (*Abelmoschus esculentus*) L.
	Name of variety	Punjab-7
	Parentage	*A. esculentus* cv. Pusa Sawani × *A. manihot* ssp. *manihot* cv. Ghana.
	Breeder/Institute responsible for maintaining Breeder's Stock	Department of Vegetable Crops, Landscaping and Floriculture, P.A.U. Ludhiana.
	Description of variety	Plants medium tall, splashes of pigmentation on stem, leaves deeply lobed. Fruits medium long, green, tender and five ridged. Fruit tip blunt and slightly furrowed. High degree of resistance to yellow vein mosaic virus.
	Two identifiable morphological characteristics of the variety	(1) Leaves are deeply lobed upto the base of the petiole and margins less serrated. (2) The basal portion of the petiole is deeply pigmented.
	Yield	115 qtls/ha.

3.	Crop	Cotton (*Gossypium shirsutum linn*)
	Name of the variety	DS-5
	Parentage	Shamli × S44-4
	(a) Breeder/Institute responsible for maintaining breeder's stock	Senior Cotton Breeder, Haryana Agricultural University, Hissar.
	Description of variety	Green plant body, several monopodia at the base, leaves medium in size narrow lobed with 3-5 lobes flowers white with dark red petal spot, yellow pollen and medium size, bolls with good fluffy opening, tolerant to shat tering of kapas.
	Two identifiable and distinguishable morphological characteristics of the variety	Green plant body with 3-5 narrow lobed leaves, white flowered with dark red petal spot.
	Yield	The variety yielded 2230 kg seed cotton/ha as against 1830 kg/ha of G-27. In terms of lint yield it yielded 902 kg lint/ha as against 657 kg lint/ha of G-27.

4.	Crop	Cotton (*Gossypium hirsutum linn*)
	Name of the variety	RG-8
	Parentage	G-1 × Cernum
	(a) Breeder/Institute responsible for maintaining breeder's stock	Senior Cotton Breeder, Rajasthan Agricultural University, Agricultural Research Station, Sriganganagar (Rajasthan)
	Description of Variety :	
	(a) Habit	Short statured and sympodial plant habit.
	(b) Morphological Characters	
	Leaves	Narrow lobed
	Flowers	Light yellow with red spot inside the petals.
	Bolls	Oblong shaped with 2.4 gram boll weight.

	(c) Maturity in days from seed to seed	160-170 days
	(d) Mean fibre length	16.3 mm
	(e) Ginning percentage	40.2%
	Two identifiable morphological characters of the variety	
	Leaves	Narrow lobed
	Flowers	Light yellow with red spot inside the petals
	Bolls	Oblong shaped.
	Yield	17-22 Qts/ha (seed cotton yield or Kapas).

5.	Crop	Cowpea [*Vigna unguiculata* [*L.*] *walp*]
	Name of the variety	Charodi
	Parentage	The variety is a reselection from the seed material received from Agril. Institute, Anand (Gujarat).
	(a) Breeder/Institute responsible for maintaining breeder's stock.	(a) Chief Scientist, Dryland Agriculture Research Project, H.A.U., Hissar.
	Description of variety	The variety is medium tall, well branched, develops one/two tendrils early maturing and nonshattering Mature brown pods tend to droop.
	Two identifiable and distinguishable morphological characteristics of the variety.	Chocolate colour of seed Erect growth.
	Yield	It gave an average yield of 10.2 qtls/ha as compare to 6.61 Q/ha of FS 68 during the testing period over farmer's field as well as research farm.

6.	Crop	Paddy (*Oryza sativa L.*)
	Name of the Variety	HKR-120
	Parentage	PTB 33/4* IR 3403-267-1
	(a) Breeder/Institute responsible for maintaining breeder's stock	Rice Breeder, Haryana Agri. University, Rice Research Station, Kaul.
	Discription of variety	It has semi-dwarf (105 cm) stature medium duration maturity (146-days) high tillering capacity, long slender grains, good milling recovery and good cooking quality. The white belly is absent in its rice.
	Two identifiable and distinguishable morphological characteristics of the variety	(i) It has compact growth habit and high tillering. (ii) Its flag leaf is erect and short. (iii) Its panicles appears above the leaves and grains are awnless.
	Yield	It have on an average 7221 kg/ha grain yield against 7142 kg/ha of PR-106 and 6789 kg/ha of Jaya during the last 5 years. HKR-120 yielded much higher i.e. 956 kg/ha than PR 108 and 906 kg/ha than PR-109.

7.	Crop	Paddy (*Oryza sativa L.*)
	Name of the variety	Narendra Dhan 118 (NDR 118)
	Parentage	IR 36 × Hansraj A
	(a) Breeding Institute responsible for maintaining breeder's stock	Department of Genetics and Plant Breeding, N.D. University of Agri and Technology, Faizabad.
	Description of variety	
	Dwarf	85 cm
	Tillers	7/hill
	Leaves	Green erect
	Leaf senesance	Slow
	Panicle	Fully exerted 24 cm long
	Maturity	85-90 days
	Dormency	3 weeks
	Lodging	Resistant
	Drought	Resistant
	Shattering	Moderate threshability

Fertilizer	80:40:40 kg NPK/ha
Suitability :	
(i) Rainfed upland direct seeded area.	
(ii) Multiple cropped irrigated area transplant condition.	
(iii) Late planting	
Grain	Long slender
Lemma	Awnless
Kernel size	6.38×1.99
Kernel colour	White
L.B. Ratio	3.20
Hulling %	76%
Milling %	71%
Head rice recovery %	58%
Alkali value	7.0 × 6.0
Protein	7.8
Water uptake (per 100 g)	370 ml
Volume expansion	4.28
Kernel length on cooking	10.20
Kernel elongation ratio	1.60
Cooking quality	Good
Two identifiable and distinguishable morphological characteristics of the variety	(1) Awnless to awning tendency (2) Long hairy auricle (3) Small flag leaf
Yield :	
(a) Commercial product	30-40 quintals/ha
(b) Seed	

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8. Crop	Paddy (*Oryza sativa* Linn.)
Name of the variety	VL Dhan-163
Parentage	VL Dhan 163 has been developed by pedigree method from a cross IR 747 Kn-16-36-1/IR 2053-521-1-1. The segregating generation of this cross was received from IRRI, Manila, Philippines.
Breeder/Institute responsible for maintaining breeder stock	Vivekananda Parvatiya Krishi Anusandhan Shala, Almora, U.P.
Description of variety	The plants are semi-tall with medium tillering ability and light green foliage. Panicle is compact with good exertion. Grains are medium sized with straw coloured husk. It takes about 110-115 days to mature. It has a fair degree of resistance for drought and low temperature.
Two identifiable and distinguishable morphological characters of variety	(i) Light green foliage. (ii) Shorter flowering duration (75-80 days). (iii) Compact panicle, medium grains with straw coloured husk.
Yield :	
(a) Commercial product	Grain
(b) Seed	24-25 q/ha.

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9. Crop	Sesamum (*sesamum indicum* L)
Name of the variety	Tapi (JLT-7)
Parentage	N 58-2 × C 50

N 58-2 is a released oil variety of Maharashtra State and (C-50) Pratap is cultivar from Rajasthan. This selection was made from F_2 to F_5 generation. The best progeny was finally selected in F_5 generation in Kharif 1980 season.

Breeder/Institute responsible for maintaining breeder stock : Oilseeds Specialist, M.P.A.U. Jalgaon (Mah.)

Description of variety : Plant height is 125-140 cm. Growth habit is erect & branched and about 2 to 4 fruiting branches are observed. The foliage are normal green, lower leaves are opposite and oval, middle ones are trifoliate & alternate. White upper one are alteranate and lanceolate., Flower colour is purple, capsules are long and green in colour, solitary capsular habit with four locules.

Two identifiable and distinguishable morphological characteristics of the variety : 50-60 capsules are average per plant. The capsules has 3.1 to 3.4 cm. length 0.8 to 1.0 cm breadth and 80 to 85 seeds per capsule seed colour is white It matures in 78 to 82 days. Seeds are bold in size and test in smooth. 1000 seed weight is 3.00 to 3.5 gram. It has 50.5% oil. The variety is suitable to grow under rainfed condition. The variety JLT-7 was tested in All India Coordinated trials during 1983 to 85 and given higher yield than National check TC-25.

Yield :

(a) Commercial production : 700 to 800 kg/ ha.

(b) Seed :

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10. Crop : Sunflower (*Helianthus annuus* L.)

Name of variety : **APSH-11**
(Andhra Pradesh Sunflower Hybrid-11).

Parentage : Male sterile line 7-1A × RHA-271 (Restorer)

Breeder/Institute responsible for maintaining breeder's stock : Dr. M.V. Reddi and Dr. K. Ananthasayana, Dept. of Plant Breeding, College of Agriculture, Rajendranagar, Hyderabad-30.

Description of Hybrid :

Description of cms 7-1A Male Sterile Line of APSH-11

Foliage : Dark green in colour, pubescent with stiff bristles.

Stem : Sturdy, medium tall, green covered with stiff bristles petioles long, green or light purple in colour, number of nodes upto peduncle 30.

Inflorescence : Terminal, monoheaded, flowers in 45-50 days, head size: medium to large, convex, peduncle stout in proportion to the diameter of the head.

Seeds : Medium sized, bulged out, black with or without faint white longitudinal streaks.

Maturity : About 90-100 days (Seed to Seed).

Note : Pollen shedders, multiheaded plants, dark purple plants, plants with concave heads, and plants with more than 31 nodes should be removed.

Description of 7-1 B maintainer Line : Conforms to the general description of 7-1A, but the plant is slightly shorter than 7-1A.

Note : Same as in 7-1A but remove sterile plants instead of pollen shedders.

Description of R-Line (RHA 271) :

Foliage : Light green in colour, but as the stem and petioles are purple pigmented, the entire plant appears purple washed, pubescent, but the bristles are small.

Stem : Thin, short to medium tall, number of nodes upto peduncle 24.

Inflorescence Multiheaded i.e. both terminal and auxillary on the same plant, main head flowers in about 40-45 days after sowing (earlier than A line by about 4-6 days) followed by axillary heads ensuring continuous supply of pollen, head convex.

Maturity : About 80 to 90 days (Seed to Seed)

Seeds : Small, black

Note : Remove plants with mono heads, dark purple or green plants and plants with concave heads and which are more than 25 nodes.

Distinguishing character:

Morphological Characters of APSH-11 :

(1) Crop season : All seasons throughout the year

(2) Duration : 90 to 100 days (Seed to Seed)

(3) Height : Medium Tall

(4) Habit of growth Stem: Erect, medium tall, single stemmed, green or light purple in colour.

(5) Leaves : Dark green, petioles green or light purple.

(6) Hairiness : Present, bristles, thick.

(7) Internode : Long, thick, basal internodes, shorter.

(8) Nodes : Number of nodes upto peduncle 32.

(9) Peduncle : Thick, green but turns yellow at maturity.

(10) Head : Monoheaded, medium to large, convex in shape.

(11) Seed : Obovate, broader at the apex hull black in colour with or without faint white longitudinal streaks.

(12) Kernel colour : White

(13) Seed Yield : 15 to 20 qtls/hec.

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11. Crop : Safflower (*carthamus trinctorius* L.)

Name of the variety : Sagar Mutyalu

Parentage : Pure line selection from EC. 27250 Var. Bilor exotic-canada-III

Breeder/Institute responsible for maintaining breeder's stock : Oilseeds section, Plant Pathology Unit and Breeding Unit of Safflower at Agriculture Research Institute, Rajendranagar, Hyderabad-500 030.

Description of variety :

Detailed morphological description :

1. Plant height : 85 to 95 cm
2. Branching : Copious, Racemose, Bushy, Average number of primary branches : 14. Average no. of secondary branches : 20
   Mean height from ground level at which first branch takes off : 30 cm
3. Stem : Erect, herbaceous above and below, solid.
   Form : Cylindrical, slightly ribbed
   Colour : Greenish white
   Surface : Glabrous
4. Leaves : Insertion : Cauline
   Kind : Simple : Dorsiventral, sessile, extipulate, deciduous, rigid, spinescent.
   Shape : Oblong, lanceolate.
   Arrangement : Alternate.
   Margin : Spinulate, serrate.
   Apex : Acute.
   Surface : Glabrous, herbaceous texture.
5. Flowers : Inflorescene : Racemose, Capitulum homogamous, involucre; Present, ovoid bracts, mucronate, many seriate.
   Ray florets : Absent.
   Disc florets : Hermaphrodite, bracteate; sessile, regular, actinomorphic epigynous.
   Colour : Yellow when fresh, yellow when dry
   Flowering : Centripetal (Racemose)
   Phase 30-40 days.
   Calyx : Rudimentary; reduced to a low ring, epigynous.
   Corolla : Five-coloured, gamopetalous, tubular, superior.
   Androecium : Five, epipetalous; sygenecious, superior.
   Gynaecium : Bicarpellary, syncarpous, inferior, ovary, unilocular single ovute basal, placentation, long style, bifid stigma.

Average number of heads : 35

6. Fruits	Dry Cypsella, glabrous, obovoid, White pericarp, pappus, shed.
7. Seed	Dicotyledonous, exalbuminous.
Two identifiable and distinguishable morphological characteristics of the variety	(1) Florets yellow when fresh and remain yellow on drying (y/y). (2) Rust resistance. (3) Medium tall (85-95 cms.)
Yield :	
(a) Commercial product	
(b) Seed	1300 kg/ha.

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12. Crop	Kabuli Gram (*cicer arietinum* L.)
Name of the variety	Gora Hissari.
Parentage	L 144 × P 6613
Breeder/Institute responsible for maintaining breeder's stock	Haryana Agricultural University.
Description of variety	Semispreading, 45-55 cm tall, 100 seed wt. 23-25 gm. Seed colour pinkish.
Two identifiable and distinguishable morphological characteristics of the variety	Seed colour pinkish
Yield :	
(a) Commercial Product .	
(b) Seed	20-25 Q/ha.

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13. Crop	Horse Gram (*Kulthi.*)
Name of the variety	Deepali-HPK-6.
Parentage	Local selection from Himachal Pradesh.
Breeder/Institute responsible for maintaining breeder's stock	(a) Senior Scientist (Pulses), Agriculture Research Station, Badnapur.
Description of vareity	It is early maturing & high yielding variety with bold size as compared to K.42 and Red local. Its plant height is 30-35 cm, It matures in 84 days, Non lodging, drought tolerant responsive to fertilizer.
Two identifiable and distinguishable morphological characteristics of the variety	The pod straw colour with seed coat colour is red, 100 seed weight is 3.89 gms Seed yield is 500-600 Kg per ha.
Yield :	
(a) Commercial producti	1000 to 1200 kg./ha.
(b) Seed	500 to 600 kg./ha.

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14. Crop	Cotton (*G.hirsutum*)
Name of the variety	AKH 081
Parentage	It is a derivative from the cross between G-47/4 × LL Pool (a segregate from G.hirsutum × G. anomalum cross).
Breeder/Institute responsible for maintaining breeder's stock	Punjabrao Krishi Vidyapeeth, Akola.
Description of variety	Plant height is 40 to 60 cms. It is suitable for late sowing condition because of its extreme earliness. It is suitable for double cropping or multiple cropping programme wherever irrigation is available & easier to manage under rainfed condition. The variety is dwarf plant type & matures in 150-160 days. It has synchronous boll formation and medium size boll. The ginning percentage is 36%.
Two identifiable and distinguishable morphological characteristics of the variety	Its leaf lobe prominently cut. The flowers are light yellow anthers and pollen with Bract deeply serated & bolls have 3-4 locules tapering at both ends, pointed & pitted.
Yield :	
(a) Commercial prod.	20 to 25 qtls. per ha.
(b) Seed	6 to 7 qtls. per ha.

15. Crop	Safflower (*Carthamus tinctorius* L.)	
Name of the variety	HUS 305 *MALVIYA KUSUM* 305.	
Parentage	Selection from germplasm.	
Breeder/Institute responsible for maintaining Breeder's Stock.	Department of Genetics and Plant Breeding Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221005.	
Description of variety		
(a) Plant Height	125-140 cm	
(b) Morphological characters	Semi-spreading and cone shape, branching from upper 2/3 of the plant, leaf Serrate oblong-lanceolate, green and smooth, 1·3-1.5 cm thick stem amber colour stem, 4.5 cm. long internode of main stem, capitulum oval (before flowering) appressed.	
(c) Maturity seed to seed	170-175	
(d) No. of primary branches/plant	6-8	
(e) No. of grain/capitulum	45-55	
(f) 100 seed weight (g)	4.5 gram	
(g) Oil content (%)	36-38%	
(h) Hiil content (%)	42-44	
Distinguishing character vis a vis T·65	*Variety*	
	HUS 305	*T.65*
(i) Internode length of main stem (cm)	4·5	7·0
(ii) Primary head shape (before flowering)	Oval	Conical
(iii) Nature of outer involucral bract (O.I.B.) in relation to capitulum.	appressed open	open
(iv) Length and width of bract (cm)	4 × 0.9 (short)	5.5 × 1.3 (long)
(v) Spine index OIB	136	68
Yield	11-13 (Q/ha.)	

Proceedings of the Eleventh Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 11th October, 1988 under the Chairmanship of Dr. R. S. Paroda, DDG (CS), ICAR

The list of the participants is annexed as Annexure I.

2. The Chairman welcomed the members and informed that the Committee has been reconstituted as the term of earlier Committee was over and it is the first Meeting of the reconstituted Committee. He solicited the cooperation of members of the Committee to fulfil the responsibilities assigned to the Committee. He further mentioned that there was no backlog and all the proposals received in the past were examined and discussed by the previous Committee. He placed on record the appreciation for the efforts made by the outgoing Committee.

3. The Chairman assured that the present Committee would also try its best to dispose of the proposals at the earliest to avoid any delay in release and notification of the varieties. He also indicated that ICAR is also considering to draw a time bound calendar of operation for submission of the proposals for release after the identification of varieties in the All-India Workshop. He was of the opinion that proposed action plan envisages the submission of proposal within four months after its identification to the Central Sub Committee on Crop Standards, Notification and Release of Varieties.

4. Chairman also informed that ICAR has constituted a Committee to develop uniform proformae to submit the data related to yield, disease and pest, agronomic trials etc. to the All-India Workshop. It will facilitate speedy and scientific examination of the performance of the variety under examination. He advised the members of the Committee to submit the report at the earliest.

5. Chairman also suggested that after identification in All-India Crop Workshop, the variety should be tested in the minikit and adaptive trials under proposed name in place of the name or number under which it was tested in the coordinated trials. It will help in better popularisation of the variety and to avoid any possible confusion in the nomenclature of the variety.

6. After this, the regular Agenda Items were taken for discussion. The decisions of the Committee on each item is as follows:

Item No. 1: Confirmation of the Minutes of the 10th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 24th March, 1988.

7. The Minutes of the earlier Meeting were confirmed.

Item No. 2: Review of action taken on the Minutes of the 10th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

8. The position indicated in the Agenda Notes was noted by the Committee/participants.

Item No. 3 : Release/Notification of varieties

9. Thirty six proposals of various varieties of different crops were considered for Release and Notification. The observations of the Central Sub Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated in the Tables given below:—

TABLE No. 1 : **Details of the Varieties recommended for Release and Notification**

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra	MP-124 (ICTP-8203)	Recommended for Release for cultivation in Maharashtra and Andhra Pradesh.
2.	Barnyard millet	VL Madira-29 (VL-29)	(i) Recommended for release for cultivation in all Barnyard millet growing States except Tamilnadu and Andhra Pradesh. (ii) The variety is reported to be susceptible to smut disease. Therefore, seed treatment with suitable systemic fungicide is desirable.
3.	Chillies	Bhaskar (X-235)	(i) Recommended for Release for cultivation throughout Andhra Pradesh and Parts of Karnataka. (ii) The Project Coordinator (Veg.) was of the view that Bhaskar has performed well in Bihar and Orissa in the coordinated trial. He was, therefore, advised to re-submit the proposal for release of the variety for cultivation in Bihar and Orissa (iii) The variety has already been notified vide S.O. No. 867 (E). dated 26-11-87.
4.	Maize	Deccan Hybrid Makka-1 (EH 401075)	Recommended for Release for cultivation for entire maize growing areas of the country in Rabi season.

1	2	3	4
5.	Maize	. Dhawal (VC 80 × (Eto × Tu × p br 2)	Recommended for Release for cultivation in White Maize growing areas in Rabi season.
6.	Maize	. Ganga-11 (EH 5131)	Recommended for Release for cultivation throughout the country in Kharif and Rabi for yellow maize growing areas under irrigated conditions.
7.	Maize	. Pusa Composite-1 (E.F.C.)	Recommended for Release for cultivation in Punjab, Haryana, Rajasthan, Delhi, Uttar Pradesh, Bihar, Andhra Pradesh, Karnataka, Maharashtra and parts of Tamilnadu and Madhya Pradesh.
8.	Maize . . .	. Pusa Composite-2 (EVA 61-80)	Recommended for Release for cultivation in Andhra Pradesh, Karnataka, Gujarat, Maharashtra and parts of Tamilnadu, Madhya Pradesh, Punjab, Haryana, Rajasthan, Delhi, Western Uttar Pradesh and Central Uttar Pradesh under irrigated conditions.
9.	Maize	. Surya (D765 × D787) F5	Recommended for Release for Cultivation in maize growing area of the country.
10.	Maize	. VL Makka-42 (VL-42)	Recommended for Release for cultivation in Himalayan Hills (Zone-I) and peninsular India (Zone-IV) under rainfed conditions.
11.	Mothbean (Dew gram) . . .	. Maru Moth-1 (JMM 259)	Recommended for Release for cultivation in Arid zone of the country.
12.	Onion	. Agri. found Dark Red	Recommended for Release for cultivation throughout the country where kharif onion is grown.
13.	Tomato	. Pant T-3 (AC 292)	Recommended for Release for cultivation in the plains of Uttar Pradesh, Bihar, Punjab, Gujarat and Delhi.
14.	Pumpkin	. Ambili (CM-14)	Recommended for Release for cultivation in Southern zone of the country.
15.	Sunflower . . .	. MSFH-10	Recommended for Release for cultivation in all sunflower growing areas of the country.
16.	Paddy	. Salivahana (IET 7590) (RP 1057-391)	Recommended for Release for cultivation in low lying areas in state of West Bengal, Tamilnadu & Orissa.
17.	Paddy	. Tulsi (IET 7614)	Recommended for Release for cultivation in rainfed upland areas of T.N., A.P., Assam, Meghalaya, South Bihar, East & West U.P., M.P. and Karnataka.
18.	Paddy	. Suraksha (IET-7946)	Recommended for Release for cultivation in Tripura and Assam States in view of reported resistance of the variety for gall-midge.
19.	Field pea	. Malaviya Matar-2 (HUP 2)	Recommended for Release for cultivation in North East Plain zone. (NEPZ) and East Zone (EZ).
20.	Wheat	. PBW-65	(i) Recommended for Release for cultivation in rainfed low fertility conditions in North Plain Zone. (ii) The variety has already been notified vide S.O. 165 (E) dated 6-3-87.

10. The details regarding important features of the above varieties are given in Annexure II.

TABLE No. 2 : **Details of the varieties recommended for Release**

Sl. No. 1	Crop 2	Variety 3	Remarks 4
1.	Tobacco	. Bhavya	Recommended for Release for cultivation in the areas where variety FCV special is predominantly cultivated in Karnataka-H.D. Kote, Hunsur & parts of Periapatna and Ramanathapura spread over Mysore and Hassan Districts where powdery mildew disease is not endemic.
2.	Cumin	. RZ-19	Recommended for Release for cultivation in all Cumin growing areas of Rajasthan State namely Districts of Barmer, Jalore, Pali, Ajmer Bhilwara, Tonk and Jaipur.
3.	Fennel	. Gujarat Fennel-1	Recommended for Release for cultivation in all the Fennel growing areas of Gujarat State namely of Districts of Mehsana, Banaskantha, Sabarkantha, Kaira, Ahmedabad, Gandhinagar and Sourashtra regions.

1	2	3	4
4.	Ginger	Suprabha	Recommended for Release for cultivation under rainfed as well as irrigated conditions in varied agro-climatic conditions of Koraput, Kalahandi, Phulbani, Ganjam, Dhankanal and all other Districts of Orissa.
5.	Turmeric	Roma	Recommended for Release for cultivation in rainfed as well as irrigated conditions in Orissa State.

11. The details regarding important features of the above varieties are given in Annexure III.

Table No. 3: Details of the varieties which could not be recommended for Release and Notification for want of more information

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra	MH-123 (MBH-136)	The Committee desired that additional information on the following be submitted:— (i) Yield and disease (downy mildew) advantage over check. (ii) Disease reaction (downy mildew) of the parents. (iii) Yield comparison with BK-560 and MH-179. (iv) Disease data under epiphytotic conditions. (v) Whether female parent of MBH-110 and MH-123 is common. (vi) Quantity of Breeder seed available.
2.	Finger millet . . .	RAU-8	The claim with regard to resistance to blast disease might be substantiated by submitting more data.
3.	Groundnut . . .	M.A. 16 (VB)	(i) More data be submitted to substantiate its superiority in yield and for recommendation for cultivation in Southern Zone. (ii) More data on diseases/pests and agronomical trails be submitted.
4.	Groundnut . . .	M-335	(i) More data be submitted on yield, earlyness, pests and disease specially on aphids. (ii) Comments of the Project Coordinator regarding performance of this variety over other checks be provided.
5.	Tobacco	G-11/1 (Hema)	More data relating to diseases and pests in comparison to check variety may be made available.
6.	Paddy	IET-7613	There are other varieties released for rainfed upland condition. Hence, the IET-7613 might be tested against those varieties having the same duration or if data is available then same be submitted accordingly.
7.	Rajmash	HUR-15 (Malaviya Rajmash-15)	(i) More data be provided based on different locations, specially in non-traditional areas. Present data is very much limited. (ii) Data on diseases and pests reaction in comparison to the available check may be submitted. (iii) Information on agronomical aspects such as sowing time and seed rate would be desirable and fertilizer requirement etc.

12. The Sponsoring Authorities are advised to resubmit the proposal alongwith desired information so that the same could be reconsidered by the Central Sub-committee on Crop Standards, Notification and Release of Varieties.

Table No. 4 : Details of the varieties not recommended for Release/Notification

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Cotton	Vikas	The Proposal is meant for release in Uttar Pradesh. Sponsoring Authority is advised to submit the proposal to UP State Seed Sub-Committee in case it is not released in UP State so far.
2.	Maize	M-13 (Hemant)	The variety is not found superior in comparison to Dhawal which has been recommended for release for same maturity group.
3.	Maize	Composite A-82 (Krishna)	Not approved because Pusa Composite-2 is found superior in comparison to A-82.
4.	Maize	D-823 (Pragati)	Not recommended for release because Surya is found better with wider adaptability.

Item No. 4 : Notification of the Varieties under Section 5 of the Seed Act.

13. Twenty seven proposals of different crop varieties were considered for notification. The decision of the Committee is indicated in the Tables given below:

TABLE No. 1 : **Details of the varieties recommended for notification for entire country**

Sl. No.	Crop	Variety
1	2	3
1.	Finger millet	Gujarat Nagli-2
2.	Guinea grass	PGG-19
3.	Gram	PBG-1
4.	Lentil	LL-147
5.	Maize	Gujarat Makai-1
6.	Niger	RCR-317
7.	Paddy	Hari
8.	Raya	RL-1359
9.	Cotton	Jawahar Kapas-3
10.	Cotton	G. Cot Hybrid-8
11.	Cotton	HS-45
12.	Wheat	PBW-154
13.	Bajra	HHB-60

14. The details of the important features of the above varieties is given in Annexure IV.

TABLE No. 2 : **Details of the varieties which could not be recommended for notification for want of data of All-India Coordinated Trials**

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra Napier Hybrid	PBN-83	(i) The views of the concerned Project Coordinator and data generated in the Coordinated Trials might be obtained on Priority. (ii) Committee authorised the Chairman to decide the notification of the varieties based on the information received from concerned Project Coordinators.
2.	Brinjal	Punjab Barsati	
3.	Brinjal	Sada Bahar Baigan	
4.	Cotton	Ludhiana Desi-327	
5.	Paddy	G.R. 102	

Item No. 5 : Details of the varieties to be examined by a Committee for notification.

15. Representative of the Tamil Nadu Government mentioned that several varieties of paddy which are mainly location specific in nature have become popular in the Tamil Nadu State and are much in demand. The varieties have already been released by the Tamil Nadu State Seed Sub Committee. Due to some reasons the varieties could not be submitted for testing under coordinated trials simultaneously for their testing in State. However, majority of these, now being tested under All India Rice Improvement Project. Therefore, it was requested that a Committee might examine the performance of these varieties and submit its report for consideration of the Chairman of the Committee to decide the notification of these varieties.

16. The Central Sub-Committee on Crop Standards, Notification and Release of Varieties constituted a Committee comprising of the following to examine the performance of these varieties by visiting the areas in which they are being grown and also data generated during the trials:

1. Dr. E.A. Siddiq, Project Director, Directorate of Rice Improvement Project, Rajindra Nagar, Hyderabad.
2. Dr. K. Mohan Naidu, Director, Sugarcane Breeding Institute, Coimbatore.

3. Dr. Venketaraman, Rice Pathologist, Directorate of Rice Improvement Project, Rajendra Nagar, Hyderabad.

4. Shri N. S. Tunwar, Dy. Commissioner (QC), Ministry of Agri., Deptt. of Agri. & Cooperation, New Delhi.

Table No. 3 : **Detail of the varieties to be examined by the Committee**

Sl. No.	Crop	Variety
1.	Paddy	Improved White Ponni
2.	Paddy	TPS-1
3.	Paddy	MDU-2
4.	Paddy	PMK-1
5.	Paddy	ADT-37
6.	Paddy	ADT-38
7.	Paddy	ADT-39
8.	Paddy	TPS-2
9.	Paddy	IR-50

Miscellaneous Item

17. Some of the Varieties were recommended conditionally for notification subject to the approval by Chairman, Central Sub-Committee on Crop Standards, Notification and Release of Varieties. Accordingly, sponsoring authorities were requested to provide detailed information for consideration of Chairman. After receipt of the information and its examination the Chairman approved the notification of the following varieties:

Sl. No.	Crop	Variety
1.	Paddy	Satya
2.	Paddy	Saleem
3.	Paddy	Mandyavijay
4.	Toria	Panchali

18. The detail of the important features of the above varieties is given in Annuexue V.

ANNEXURE I

List of the participants who have attended the 11th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held under the Chairmanship of DDG (CS), ICAR, on 11th October, 1988 in Krishi Bhavan, New Delhi

	Participant	
1.	Dr. R.S. Paroda, Deputy Director General (CS), Indian Council of Agril. Research, Krishi Bhavan, New Delhi.	*Chairman*
2.	Shri K.C. Katyal, Managing Director/General Manager (Production), National Seeds Corporation Ltd., Beej Bhavan, Pusa Complex, New Delhi-110012.	*Member*
3.	Dr. P.K. Agrawal, Head, Division of Seed Sciences and Technology, IARI, New Delhi.	,,
4.	Dr. K.R. Chopra, Director Research & Production, Mahendra Hybrid Seed Co., Post Box 52, Jalna.	,,
5.	Shri S.P. Rai, Director of Agriculture, UT of Daman & Diu.	,,
6.	Shri Ahmed Hussain Khan, Vill. & P.O. Usia, Gazipur (U.P.)	,,
7.	Shri R.S. Arora, Managing Director, M/s Century Seeds Pvt. Ltd., U/L Floor, M-1, Anupam Bhavan, Nainiwala Bagh, Azadpur, Delhi.	,,
8.	Shri K.M. Hooda, 375/16, Hari Niwas, Jhajjar Road, Rohtak, Haryana.	,,
9.	Shri D.V. Singh, Managing Director, M.P. State Seed Certification Agency, Bhopal.	,,
10.	Shri P.S. Gill, Director, Punjab State Seed Certification Authority, Chandigarh.	,,
11.	Shri B.U. Modi, Director, Gujarat State Seed Certification Agency, Ahmedabad.	,,
12.	Dr. U.B. Singh, Director Seed Certification, Rajasthan, Jaipur.	,,
13.	Shri S.K. Sindhwani, Director, Haryana State Seed Certification Agency, Chandigarh.	,,
14.	Shri S.B. Akhegaonkar, Divisional Seed Certification Officer, for Director Seed Certification, Maharashtra, Pune.	*Member*
15.	Shri V.G. Arunachalam, Director of Seed Certification I/C. Coimbatore, Tamilnadu.	,,
16.	Dr. K. Mohan Naidu, Director Sugarcane Breeding Instt. Coimbatore, Tamilnadu.	
17.	Shri N.S. Tunwar, Dy. Commissioner (QC), Ministry of Agri. Deptt. of Agriculture & Coopn., F/106, Shastri Bhavan, New Delhi.	,,

Others

18. Shri T. Thanikachalam,
Jt. Director of Agriculture,
Govt. of Tamil Nadu, Madras-5.

19. Shri Mangla Rai,
Asstt. Director General (Seeds),
ICAR, Krishi Bhavan, New Delhi.

20. Shri S. Nagarajan,
Asstt. Director General (PP),
ICAR, Krishi Bhavan, New Delhi.

21. Shri T.S. Sandhu,
Jt. Director Agriculture
Haryana, Chandigarh.

22. Shri H.S. Gill,
Project Coordinator (Veg.) Crops, IARI,
New Delhi.

23. Shri N.N. Singh,
Project Coordinator (Maize), IARI,
New Delhi.

24. Shri A. Narayanaswamy,
Jt. Director Seed Certification,
Karnataka State Seed Certification Agency,
Bangalore.

25. Dr. N.P. Nema,
General Manager (RD&QC),
National Seeds Corpn. Ltd.,
Beej Bhavan, Pusa Complex,
New Delhi-110012.

26. Sh. M.S. Shukla,
Dy. Seed Officer (QC),
Ministry of Agriculture,
Deptt. of Agriculture & Coopn.,
F/107, Shastri Bhavan, New Delhi.

ANNEXURE II

The important features of the Varieties recommended for Release and Notification by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 11th Meeting held on 11th October, 1988

1. Crop : Pearl Millet (*Bajra*)

Variety : MP 124 (ICTP 8203)

Sponsored by : ICRISAT/AICPMIP

Parentage with details of its pedigree : ICTP 8203 was first produced by random mating five S_2 progenies, selected at Patancheru, from a landrace cultivar from Togo. It has been advanced and maintained in isolation for a number of generations.

Description of the variety :

(a) Plant height : 160-230 cm

(b) Distinguishing morphological characters : Large seed size with dark grey colour which becomes shiny on the exposure to light, thus giving a shiny appearance to the outer grain surface. Compact to semi-compact heads, lanceolate to cylinderical in shape which slightly taper towards the tip. Glume colour and anther colour variable.

(c) Maturity (range in number of days) seeding Transplantation to flowering, seed to seed : Flowers in about 52 days in Maharashtra and in Andhra Pradesh. On all India basis, flowering ranges between 40-60 days and maturity ranges between 70-95 days.

(d) Maturity group (early, medium late wherever such classification exists) : Early

(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/bio-types to be indicated wherever possible.) Highly resistant to downy mildew. Smut is not a problem in Maharashtra and Andhra Pradesh. On all India basis, resistance to smut and ergot comparable to WC-C75 and less than BJ 104.

Average yield under normal conditions (yiled in kg/ha). : About 2000 kg/ha.

Agency responsible for maintaining breeder seed : ICRISAT, Patancheru (P.O.), Andhra Pradesh-502 324 (India).

Specific recommendations, if any for seed production: Rogue out segregants with small seeds, dwarf height and small thin-loose heads.

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2. Crop : Barnyard millet (*Echinochloa frumentac*)

Variety VL Madira 29 (VL 29)

Sponsored by . Vivekananda Parvatiya Krishi Anusandhan Shala (ICAR), Almora (U.P.)

Parentage with details of its pedigree : Local collection (VHC 5360-1) from Kumaon region of Uttar Pradesh.

Description of the variety:

(a) Plant height : 95-100 cm.

(b) Distinguishing morphological characters : Medium height Slight pigmentation at the nodes Erect compact ear head

(c) Maturity (range/in number of days) Seeding to flowering, seed to seed : Seeding to flowering 50 days (34-64 days) Seed to seed 88 days (66-125 days)

(d) Maturity group (early medium and late/wherever such classification exists) : Early

(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/bio-types to be indicated wherever possible) : Grain smut is the major disease problem in *Echinochloa*. Smut incidence records in VL-29 is very low. In comparison to other identified variety ECC 6 (19.3%), average smut incidence per plant in VL 2 was 15%.

Average yield under normal conditions (yield in kg/ha) 2500 kg/ha.

Agency responsible for maintaining breeder seed : V.P.K.A.S., Almora (U.P.).

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3. Crop : Chillies (*Capsicum annum* L.)

Variety : Bhaskar (X 235)

Sponsored by : Andhra Pradesh Agricultural University.

Parentage with details of its pedigree : G4 × Yellow anther mutant.

Description of the varierty :

(a) Plant height : 75·4 cm.

(b) Distinguishing morphological characters : Narrow dark green leaves and yellow anthers which serve as marker gene to identify the variety and to maintain purity.

(c) Maturity (Seed to seed) : 170 days

(d) Maturity group : Medium

Average yield under normal conditions : Rainfed : 15 Q/ha.
Irrigated : 20 Q/ha.

Agency responsible for maintaining breeder seed : Senior Scientist (Vegetable), Regional Agricultural Research Station, Lam, Guntur-34.

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4. Crop : Maize (*Zea mays* L.)

Variety : Deccan Hybrid Makka-1 (E.H. 401075)

Sponsored by : All India Co-ordinated Maize Improvement Project.

Parentage with details of its pedigree : *Single crosses*

Male : Ade C–A–257-f-f-/-/- - -/-/- - -/-/- - 2-1-f-1-/-/- - x CM 111 - -/-/- - -/-/- –2- - -/-/- 11-/-/- -1-f-2- -/-/- -1-2 - -/-/ .

Female : SS III - -/-/- - B-1- -/-/- - - -/-/- -/-/- - -/- -1 × RN-6PN 6 Ht LB-2- -/-/- × bulk- -/-/- - -/-/- - - 1-2– -/-/-.

Description of hybrid :

(a) Plant height : The hybird is 155 cm compared to 133 Local and 145 Hunius.

(b) Distinguishing morphological characters :
Tassel : Open
Glume : Purple tinge
Anthers : Light purple
Silk : Light purple
cob : Light purple
Grain : Orange yellow semident.

(c) Maturity (range in number of days) seeding to flowering, seed to seed : The hybrid flowers in 77-105 days and matures in 110-150 days in different zones.

(d) Maturity group (early medium and late) : Early

(e) Reaction to major diseases under controlled conditions : The hybrid is resistant to important diseases.

(1) Turcicum leaf blight :–The hybrid is highly resistant to H. pupcicum rated 1.25 compared to local which rated 3.25

(2) *Rust* : The hybrid is resistant to rust (2.0) compared. to local (5.0)which is highly susceptible and hunius (2·5).

Description of parent of the hybrid

		SS III	*RN* 6	*Ade C*	*CM* 111
(a) Plant height	*Plant hight cms* / *earheight cms*	117/59	134/56	125/47	147/52
(b) Distinguishing morphological characters	Tassel	Open	Open	open	Open
	Glume	Purple tinge	Purple tinge	Purple tinge	Purple tinge
	Anthers	Light purple	Cream	Cream	Light purple
	Silk	Light purple	Cream	Purple	Cream
	Cob	White	Light	White purple	White
	Grain	Yellow semi-dents	Orange Yellow semident	Ornage flint	Orange flint

(c) Days to 50% flowering	*SS III*	*RN* 6	*Ade C*	*CM* 111
	(at Hyderabad)			
	75	75	72	72
(d) Maturity (Range in number of days) seed to seed	115	115	110	118

(e) Is there any problem of synchronization. If yes, methods to overcome it : Female single cross should be planted one week in advance of male plar

(f) Reaction to major diseases (under controlled conditions)	:	Data presented shows that the parental lines highly resistant to leaf blight compared to local which is highly susceptible.
Average yield under normal conditions (yield in kg/ha)	:	5000 to 7500 kgs/ha.
Agency responsible for maintaining breeder seed	:	Plant Pathologist, Maize Research Station, Amberpet, Hyderabad. A.P. Agricultural University.

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5. Crop	:	Maize (*Zea mays* L.)
Variety	:	Dhawal (VC 80×(Eto×Tu×pbr_2))
Sponsored by	:	All India Co-ordinated Maize Improvement Project
Parentage with details of its pedigree	:	Varietal cross between VC 80 and Eto×Tuxpeno br_2 in advance generation.
Description of variety :	:	
(a) Plant height	:	180 to 200 cm.
(b) Distinguishing morphological characters	:	It has thick and sturdy stem, with medium size, plants leaves—Semi erect wide and sometimes hairy tassels branched with slight purple stripes on the spikelet, anthers green to pinkish, silk, green to pink, grain bold white semi-flint.
(c) Maturity (range in number of days) Seeding/Transplanting to flowering, seed to seed	:	135-150 days seed to seed
(d) Maturity group (early, medium and late-wherever such classification exists)	:	Full season maturity group 'A'.
(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/biotypes to be indicated wherever possible)	:	It has shown better or comparable tolerance to foliar diseases.
Average yield under normal conditions (yields in kgs/ha)	:	4500 kg/ha.
Agency responsible for maintaining breeder seed	:	Co-ordinating Unit of All India Co-ordinated Maize Improvement Project
Specific recommendations, if any for seed production	:	Seed is produced in isolation. Keeping 400 m distance between the maize fields.

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6. Crop	:	Maize (*Zea mays* L.)
Variety	:	Ganga 11 (EH 5131)
Sponsored by	:	All India Co-ordinated Maize Improvement Project
Parentage with details of its pedigree	:	Double top cross hybrid EH 5131, developed during 1981 rabi, it has the following parentage. CM 202×CM 111 : Female Suwan 1 (S) C 7 : Male
Description of variety/hybrid :	:	
(a) Plant height	:	180-200 cms in Kharif season 180-210 cms in rabi season.
(b) Distinguishing morphological characters	:	Plants are medium in stature with healthy stalks. Leaves are wide and medium in length. Tassels are green and medium in size. Glume and anthers are green pre-dominantly. Silks are green in general. Ears placement is good and at equal heights. Ears are cylindrical, long and filled with grains upto the tips. Grains are bold and yellow semi-flint.
(c) Maturity (range in number of days) seeding/transplanting to flowering, seed to seed	:	100-110 days seed to seed in kharif. 135-140 days in rabi season.
(d) Maturity group (early medium and late wherever classification exists)	:	Full-season maturity group
Description of the parents of the hybrid ·	:	
CM 202	:	Plants short statured erect leaves, tassel spaced with very few branching Anther green, silk green, ears cylinderical with yellow dent grain.
CM 111	:	Plants medium statured, leaves semi-erect to drooping, wide tassel comb like structure, with green anthers and spikelets, silks green, ears long with orange flint grains.
Suwan 1 (S) C 7	:	Plants medium, leaves semi-erect. Tassels branched with green spikelets sometime purple tinge on the spikelet. Anthers green, silks predominantly green and some time gets sun red colour, ears cylindrical with orange/yellow flint to semi-flint grains.

Average yield under normal condition (yield in kg/ha). : Average yield under normal condition 4500 kg per hectare in kharif and 5500 kg/ha in rabi.

Agency responsible for maintaining breeder seed : Co-ordinating Unit of All India Co-ordinated Maize Improvement Project.

Specific recommendations, if any for seed production The seed production of EH 5131 involves one of the single cross of Ganga 5 i.e. (CM 202 × CM 111). The third parent Suwan 1 is different. So seed production of two hybrids can be done simultaneously.

7. Crop : Maize (*Zea mays* L)

Variety : Pusa Composite-1 (E.F.C.)

Sponsored by : Division of Genetics, IARI, New Delhi-110012.

Parentage with details of its pedigree : Generated from the recombination of selected families of population A 600, A602, A603 and A604.

Description of the variety : :

Plant height : 175 to 180 cm.

Distinguishing morphological characters : It is a medium tall composite. Ears are placed in the middle. The grains are rounded and skiny ornage flint to semi-flint, borne on straight even rows on a cylindrical ear. Husk cover is fully extended and tight.

Maturity (range in number of days) seeding/ transplanting to flowering, seed to seed : Silking 53 to 61 days.

Maturity group (early, medium and late wherever such classification exists) : 'C' maturity group.

Average yield under normal conditions (yield in kg/ha.) : 3000-3500 kg/ha.

Agency responsible for maintaining breeder seed : Maize Breeder, Division of Genetics, I.A.R.I., New Delhi-12.

Specific recommendations, if any, for seed production : The seed of the Composite EFC (PC-1) must be multiplied in isolation. The distance from the other maize plot should not be less than 400 meters.

8. Crop : Maize (*Zea mays* L.)

Variety : Pusa Composite-2 (EVA 61-80).

Sponsored by : Genetics Division, IARI, New Delhi-110012.

Parentage with details of its pedigree : Developed from top 10 full-sib families of population A61 in cycle-3. Population A61 was synthesized from several exotic and indigenous maize materials which was bulked in equal quantity and grown in isolation in 1974 and later subjected to half-sib and full-sib method of recurrent selection.

Description of the variety :

(a) Plant height : 190-200 cm.

(b) Distinguishing morphological characters : The grains of EVA 61-80 are yellow semiflint and uniformally placed in straight rows. The ear is large, stout and possesses excellent tip filling character. The ears are enclosed in well developed husk covers.

(c) Maturity (range in number of days to flowering): Silking 56.0 to 64.7 days.

(d) Maturity group (early, medium and late wherever such classification exists) : It belongs to medium maturity group.

Average yield under normal conditions : The average yield of EVA 61-80 under normal conditions is 35 q/ha.

Agency responsible for maintaining breeder seed : Senior Maize Breeder, Maize Project No. AR. Gen. 4. Division of Genetics, IARI, New Delhi-110012.

Specific recommendations, if any, for seed production : The seed of EVA 61-80 should be produced in isolation. The distance of 400 meters from other maize plots should be maintained strictly.

9. Crop Maize (*Zea mays* L)

Variety : *Surya* (D 765 × D 787) F5

Sponsored by : All India Coordinated Maize Improvement Project (AICMIP)

Parentage with details of its pedigree : D 765 is a released variety which was constituted by crossing local materials and Hungarian hybrid introductions.

D 787 was developed by mixing the equal quantity seed of following materials (Guat × Ant. Gr. II) × D 743 (D 1 × J 603) × D 743 (J 603 × J 602) × D 743 (D 745 × D 743) × D 743.

Mexcla Am. Sel. × D 743.

The cross of D 765 × D 787 was made and it was advanced upto F_5 through bulk sibbing.

Description of variety :

(a) Plant height : 157-175 cm.

(b) Distinguishing morphological characters :

Tassel : Loose and sparse

Glumes : Normally green

Anthers : Pale green

Silk : Pale green

Grain type : Yellow semiflint

Cob colour : Predominantly white

(c) Maturity (range in number of days) seeding/transplanting to flowering :

Seed to seed : Seed to flowering 47-52 days and seed to seed 74-79 days.

(d) Maturity group (early, medium and late) : D maturity (very early)

(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/biotypes to be indicated wherever possible) : Resistant/tolerant to all major foliar/stalk disease.

(f) Reaction to major pests (under field and controlled conditions including store pests) : Tolerant.

Average yield under normal conditions (Kg/ha.) : 3000 kg/ha.

Agency responsible for maintaining breeder seed : G.B. Pant University of Agriculture & Technology, Pantnagar-263145 (U.P.)

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10. Crop : Maize (*Zea mays* L.)

Variety : VL Makka 42 (VL 42)

Sponsored by : Director, Vivekananda Parvatiya Krishi Anusandhan Shala, Almora-263 601 (U.P.)

Parentage with details of its pedigree : Double cross hybrid VL 42, developed during 1967, has following parentages: (V55B × V57) : Female

X

(V20B × V50) : Male

Description of the variety/hybrid :

(a) Plant height (cms) : 215-220 cms under mid-hill conditions.

(b) Distinguishing morphological characters : Plants, are medium in stature with healthy stalks of green colour which turn purplish at the time of maturity. Leaves have medium length and width and dark green colour. Tassel are medium in size and loose. Glume and anther colour predominantly purple to dark purple but few green (about 10%) may also be observed. Silks are pink in colour but few (about 5%) may have pale green colour. Each plant bears one tightly husked ear in the middle of the plant Ears are cylindrical, thick and long. Grains are bright orange-flint and boldi in size.

Maturity (range in number of days) seeding/transplanting to flowering, seed to seed. : (i) 49-51 days—sowing to 50% silking under mid-hill conditions.

(ii) 85-90 days—seed to seed maturity under mid-hill conditions.

Maturity group (early, medium and late wherever such classification exists) : Very-early maturity duration (D maturity)

Description of parents of the hybrid :

Pedigree of the parents

	V55B	*V20B*	*V57*	*V50*	*V55B* × *V57*	*V20B* × *V50*
Days to silk	50-52	52-55	52-53	55-57	52-55	55-57
Maturity in days	90-95	95-100	95-100	100-105	95-100	100-105
Plant height	180-185	140-145	155-160	180-185	205-210	175-180
Stem	Light purple	Green, thin at the top	Green	Green	Light purple to green	Light purple to green
Leaves	Green, narrow	Green, narrow, erect	Green, short, semi-erect	Dark green, broad, long, drooping	Narrow, green, short, drooping	Green, long, broad, drooping

	V55B	*V20B*	*V57*	*V50*	*V55B × V57*	*V20B × V50.*
Tassel	Small, open	Medium, close	Small close	Medium open	Medium open	Medium open
Glume	Light purple dark purple ring at base.	Green	Purple	Purple	Purplish	Purplish
Anther	Light purple	Green	Purple	Purple	Light purple	Light purple
Silk	Pale green	Purple	Pale green	Purple	Pale green	Purple
Ear Shape	Cylindrical. medium size.	Cylindrical small	Cylindrical small tappering ends.	Cylindrical medium	Cylindrical long	Cylindrical, ends tappering.
Grain	Yellow flint. round medium.	Light orange, flint round, medium	Orange flint, round medium.	Yellow flint, round medium.	Orange flint, round medium bold	Yellow flint, round medium
Cob-wood	White hard	White hard	White hard	White hard	White hard	White hard
Kernal rows	Straight	Irregular at the tip	Irregular at the tip	Irregular at the tip.	Straight	Straight

Average yield under normal conditions (yield in kg/ha) : 40 - 45 kg/ha

Agency responsible for maintaining breeder seed : Vivekananda Parvatiya Krishi Anusandhan Shala, Almora.

Specific recommendations, if any, for seed production : As per certification norms.

11. **Crop** : Mothbean or Dew gram (*Vigna aconitifolia* (Jacq.) Marechal)

Variety : Maru Moth-1 (JMM 259)

Sponsored by : Central Arid Zone Research Institute (ICAR), Jodhpur, Rajasthan.

Parentage with details of its pedigree : Variety evolved through chemical mutation by treating locally adapted variety 'Jadia' by 0.3% (EMS), Ethyl Methane Sulphonate.

Description of the variety :

(a) **Plant height** : Height is 30 cm, having well defined main axis.

(b) **Distinguishing morphological characters** : The variety is semi-spreading in nature with dark green leaves. The pods are formed in clusters on the main axis as well as on primary and secondary branches. The seeds are medium bold in size.

(c) **Maturity (range in number of days) seeding/ transplanting to flowering seed to seed** :

Seeding to flowering : 37-40 days

Seed to seed : 80-85 days

(d) **Maturity group (early, medium and late wherever such classification exists)** : Not applicable.

(e) **Reaction to major diseases under field conditions (Reaction to physiological strains/races/ bio-types to be indicated wherever possible)** : The variety possesses a fair degree of field resistance to yellow mosaic virus disease.

Description of parent of the variety :

(a) **Plant height** : 30-40 cm

(b) **Distinguishing morphological characters** : The variety is profusely spreading in nature with moderately green leaves. The number of pods are less on the main axis as well as on the primary and secondary branches.

(c) **Days to 50% flowering** : 45-50

(d) **Maturity (range in number of days) seed to seed** : 90-95

Average yield under normal conditions (yield in Kgs/ha) : 700-850 kg/ha. (on large scale basis)

Agency responsible for maintaining breeder seed ... : Central Arid Zone Research Institute, Jodhpur (Rajasthan)

12. Crop	Kharif Onion *(Allium cepa)*
Variety	Agrifound dark Red
Sponsored by	Associated Agricultural Development Foundation
Parentage with details of its pedigree	Selection from Kharif local onion grown in Nasik area. Bulbs are dark red in colour, globular shape with tight skin, moderately pungent.
Description of the variety/hybrid :	
(a) Plant height	55 cm to 60 cm.
(b) Distinguishing morphological characters	Bulbs are dark red in colour, globular shaped with tight skin, moderately pungent.
(c) Maturity (range in number of days) seeding/transplanting to flowering seed to seed	150-160 days
(d) Maturity group (early, medium and later wherever such classification exists)	Not applicable.
Average yield under normal conditions (yield in Qnt/ha.)	200-250
Agency responsible for maintaining breeder seed	Associated Agricultural Development Foundation, New Delhi.

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13. Crop	Tomato (*L. esculentum* Mill)
Variety	Pant T-3 (AC 292/Pant T-3)
Sponsored by	Department of Horticulture, G.B. Pant University of Agriculture & Technology, Pantnagar, Distt. Nainital.
Parentage with details of its pedigree	It is a pure line selection from the germplasm lines maintained at Pantnagar.
Description of the variety/hybrid :	
(a) Plant height	Plants have semi-determinate growth habit; 75-85 cm length of main stem.
(b) Distinguishing morphological characters	Plants moderately spreading with 22-28 branches per plant, thick skinned, round, firm fruits, fruit stalk end and shoulders have prominent green colour till maturity level, it is slowly reduced at ripening. The fruits are completely red at full ripening.
(c) Maturity (range in number of days) seeding/transplanting to flowering, seed to seed	85-90 days after sowing in spring summer crop and 110-115 days after sowing in autumn winter crop.
(d) Maturity group (early, medium and late wherever such classification exists)	Medium
Average yield under normal conditions (yield in kgs/ha)	27500 kg/ha.
Agency responsible for maintaining breeder seed	Department of Horticulture, G.B. Pant University of Agriculture & Technology, Pantnagar.
Specific recommendations if any, for seed production.	Summer season crop gives higher seed yield.

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14. Crop	Pumpkin (*Cucurbita moschata* Poir)
Variety	Ambili (CM-14)
Sponsored by	Department of Olericulture, College of Horticulture, Kerala Agriculture University, Vellanikkara P.O., Trichur, Kerala.
Parentage with details of its pedigree	Local collection from Trichur.
Description of variety/hybrid	
(a) Plant spread	9 meter
(b) Distinguishing morphological characters	White spots on the upper surface of leaf lamina flat round fruits with shallow furrows which are green at immature stage.
(c) Maturity (range in number of days) Seeding to flowering	45-50 days
(d) Maturity group (early, medium and late wherever such classifications exists)	Not applicable.
(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/biotypes to be indicated wherever possible)	Susceptible to pumpkin mosaic

(f) Reactions to major pests (under field and controlled conditions including store pests) : Susceptible to fruit fly (*Dacus cucurbitae*)

Agency responsible for maintaining breeder seed : Department of Olericulture, College of Agriculture, Kerala Agriculture University, Vellanikkara.

Specific recommendations if any, for seed production : Since it is a highly cross pollinated crop provide an isolation distance as per standards.

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15. Crop : Sunflower (*Helianthus annuus* L.)

Variety : MSFH-10

Sponsored by : All India Co-ordinated Sunflower Research Project

Parentage with details of its pedigree : Female MHS-41
Male MHR-4

Description of variety/hybrid

(a) Plant height : 190 to 200 centimeters

(b) Distinguishing morphological characters : Light brown colour stripes on seed coat of hybrid.

(c) Maturity (range in number of days) seeding/transplanting to flowering, seed to seed : 90 to 92 days.

(d) Maturity Group (early, medium and late wherever such classification exists) Medium maturity

(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/Bio-types to be indicated wherever possible). : In field conditions found moderately resistant to rust and other foliar diseases. Reported to be susceptible to downy mildew at Latur Research Station and advised not to undertake seed production in Latur area of Marathwada region.

(f) Reaction to major pests (under field and controlled conditions including store pests) : Not found susceptible to any major pests under field evaluation.

Description of parents of the hybrid

		Female (*MHS*-41)	*Male* (*MHR*-4)
(a) Plant height	:	160 to 170 cms.	100 to 120 cms.
(b) Distinguishing morphological characters	:	Brown colour seed coat	Seed coat having whitish brown stripes.
(c) Days to 50% flowering	:	58 to 60 days	52 to 54 days
(d) Maturity (range in No. of days) seed to seed.	:	88 to 90 days	85 to 87 days

Average yield under normal conditions (yield in kg/ha). : 1600 to 1800 kgs/hectare

Agency responsible for maintaining breeder seed : Maharashtra Hybrid Seeds Co. Ltd., Jalna.

Specific recommendations if any, for seed production : Seed production programme could be organised successfully by giving 8 to 10 days staggering after planting of female parent. To overcome downy mildew disease problem production of this hybrid seed to be avoided in downy mildew sick areas like Latur and Osmanabad district of Marathwada region.

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16. Crop : Paddy (*Oryza sativa* L)

Varieity : Salivahana (IET 7590) (RP 1057-391)

Sponsored by : Directorate of Rice Research, Rajendranagar, Hyderabad.

Parentage with details of its pedigree : IET 7590 is from the Cross RP 5-32/Pankaj

Description of the variety/hybrid :

(a) Plant height : Semi dwarf—95 cm.

(b) Distinguishing morphological characters : Semi dwarf, thick stem, non-lodging, High tillering medium long and dark green leaves, dense panicle short bold grain with straw colour hull, white kernel.

(c) Maturity (range in number of days) seeding/Transplanting to flowering, Seed to seed : Seeding to 50% flowering — 128 days
Seed to seed — 155 days

(d) Maturity group (early, medium and late wherever such classification exists) : Late

Description of Parents of the hybrid

		Female RP 5-32	Male Pankaj
(a) Plant height	:	90 cm.	115 cm
(b) Distinguishing morphological characters	:	Moderate tillering dark leaves, medium slender grain.	High tillering, dark leaves, short bold grain.
(c) Days to 50% flowering	:	110	125
(d) Maturity (range in No. of days), seed to seed	:	140	153

Average yield under normal conditions (yield in kgs/ha). : 4702 kg/ha (Mean yield of 18 locations during 1982). 4030 kg/ha (Mean of 18 locations in 1983).

Agency responsible for maintaining breeder seed : Directorate of Rice Research, Hyderabad-500 030.

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17. Crop : Paddy

Variety : Tulsi (IET 7614) (RP 1451-1712-4319)

Sponsored by : Directorate of Rice Research, Rajendranagar, Hyderabad-30.

Parentage with details of its pedigree : Hybrid of Rasi and Finegora Pedigree : (RP 1451-1712-4319)

Description of variety/hybrid :

(a) Plant height : 80 cms.

(b) Distinguishing morphological characters : Semi dwarf with dark green leaves medium long narrow attached at 35-40° angle to the main stem. The leaf sheath tightly clasps the main stem, grains are long slender with apiculus purple, husk straw, kernel white, develops awn tips under adverse environments.

(c) Maturity (range in No. of days) seeding/transplanting to flowering, seed to seed : Flowering 65 days in direct seeding and 70 days in transplanting; matures in 95 days under direct seeding, in 100 days under transplanting.

(d) Maturity group (early, medium and late—wherever such classification exists) : Very early

Description of parents of the hybrid :

		Female Rasi	Male Finegora
(a) Plant height	:	90 cms.	130 cms.
(b) Distinguishing morphological characters	:	Semi dwarf with MS grains apiculus purple	Tall, lodging grains LB, apiculus green
(c) Days to 50% flowering	:	85-90	65-70
(d) Maturity (range in No. of days), seed to seed	:	115-120	95-105

Average yield under normal conditions (yield in kgs/ha) : Yield in National trials (UVT-1) Direct seeded rainfed 2.5-3.7 t/ha (on average) under transplanted rainfed conditions 2.6-3.5 t/ha; Direct seeded irrigated conditions 3.9-4.7 t/ha.

Agency responsible for maintaining breeder seed : Directorate of Rice Research, Rajendranagar, Hyderabad-30.

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18. Crop : Paddy

Variety : Suraksha (IET-7946) (RP 1551-2-7-1)

Sponsored by : Directorate of Rice Research, Rajendranagar, Hyderabad-30.

Parentage with details of its pedigree : IET 7946 is pedigree from the cross Sasyasree/MR 1523

Description of variety/hybrid :

(a) Plant height : 95 cms.

(b) Distinguishing morphological characters : Moderate tillering, medium to ong and dark leaves, dense panicles, long bold grains with brown farrow hull.

(c) Maturity (range in No. of days) Seeding/Transplanting to flowering, seed to seed : Seed to 50% flowering 103 days
Seed to seed 131 days

(d) Maturity group (early, medium and late—wherever such classification exists) : Medium

Description of parents of the hybrid :

	Female Sasyasree	Male MR 1523
(a) Plant height	90 cms.	90 cms.
(b) Distinguishing morphological characters	Moderate, tillering, medium long leaves	Moderate tillering medium to long leaves.

		Female	*Male*
(c) Days to 50% flowering	:	90	100
(d) Maturity (range in No. of days) seed to seed	:	118	128
Average yield under normal conditions (in kg/ha)	:	4348 kg/ha 3883 kg/ha	: Mean of 32 locations in 1983. : Mean of 24 locations in 1984.
Agency responsible for maintaining breeder seed	:	Directorate of Rice Research, Rajendranagar, Hyderabad-30.	

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19. Crop	:	Fieldpea (*Pisum sativum* L.)
Variety	:	Malaviya Matar-2 (HUP-2)
Sponsored by	:	Department of Genetics and Plant Breeding, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221 005.
Parentage with details of its pedigree	:	(Afil.: Knudt × C 5064) F_3 × S 143
Description of the variety/hybrid :		
(a) Plant height	:	(i) Mean : 133.33 cm (ii) Range over Locations : 114-150 cm
(b) Distinguishing morphological characters	:	(i) HUP-2 is semi-leafless (Leaflets modified into tendrils, stipules normal and tall variety). (ii) Foliage light green.
(c) Maturity (range in No. of days) seeding	:	(i) Mean (days) : 117.61 (ii) Range over locations : 100-141 days
(d) Maturity group (early, medium and late wherever such classification exists)	:	Medium
Description of parents of the hybrid :	:	Since three parents were involved in the development of variety, their descriptions are as follows :

		Afila Knudt	*C 5064*	*S 143*
Plant height (cums)	:	70	117	47.0
Distinguishing morphological characters	:	Dwarf, semi-leafless	Medium, tall, normal foliage, yellow tip of plant	Mutant with afila tendrilless reduced stipule.
Days to 50% flowering	:	60-70 days	60-62 days	40-45 days
Maturity	:	125-128 days	124-126 days	108-110 days
Average yield under normal conditions (yield in kgs/ha).	:	2000 kg to 2200 kg.		

Agency responsible for maintaining breeder seed	:	Department of Genetics & Plant Breeding, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221 005.
Specific recommendations, if any, for seed production	:	The semi-leafless plant type of HUP-2 may be used as marker for purifying the variety during seed production programme.

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20. Crop	:	Wheat (*Triticum aestivum* L.)
Variety	:	PBW 65
Sponsored by	:	Punjab Agricultural University, Ludhiana.
Parentage with deatails of its pedigree	:	(USA 255-K816) WL 202
Description of the variety/hybrid :		
(a) Plant height	:	110 cms.
(b) Distinguishing morphological characters	:	PBW 65 is a single gene-dwarf variety with erect plant height in early stages of growth. It has red, non-hairy glumes and hard amber grains. It is highly resistant to yellow and brown rusts. It is one of few varieties which carry genetic resistance to Loose Smut.
(c) Maturity (range in No. of days) Seeding/Transplanting to flowering, seed to seed	:	160 days
(d) Reaction to Major diseases under field and controlled conditions (reaction to physiological strains/races/bio-types to be indicated wherever possible)	:	Resistant to yellow and brown rusts, highly resistant to loose smut. Low incidence of Kernel bent under artificial inoculated conditions.
Average yield under normal conditions (yield in kgs/ha.)	:	3500 kg per hectare under rainfed conditions.
Agency responsible for maintaining breeder seed	:	Punjab Agricultural University, Ludhiana.

ANNEXURE III

The important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 11th Meeting held on 11th October, 1988

1. Crop : Flue cured Virginia tobacco (*Nicotiana tabacum* L.)

Variety : Bhavya (FCH 6005)

Sponsored by : Director, Central Tobacco Research Institute, Rajahmundry, Andhra Pradesh

Parentage with details of its pedigree : FCH 6002 : Female × FCH 6523 : Male

Description of the variety/hybrid :

(a) **Plant height** : 160-180 cm.

(b) **Distinguishing morphological characters** : Semi-open plant habit, generally medium cast i.e. intermediary leaf colour between light green and very light greenish yellow; elliptic to spatulate leaf shape; leaves measure 60 cm × 85 cm (±)(5 cm), upto 26 (±2) leaves can be obtained under normal conditions, and inflorescence is compact producing medium size capsules.

(c) **Maturity (range in number of days) seeding/transplanting to flowering, seed to seed** : Flowering by about 70 days from transplanting. Topped at 55-60 days.

(d) **Maturity group (early, medium and late — wherever such classification exists)** : Medium in maturity. In topped plants harvest commences from 60 to 65 days onwards, intervals between priming being 7 days normally.

Description of parents of the hybrid :

	Female *FCH* 6002	*Male* *FCH* 6523
(a) **Plant height**	160-180 cm.	100 cm.
(b) **Distinguishing morphological characters**	Semi-open plant habit medium cast. elliptic to spatulate leaf shape leaves 60 cm long and 25 cm. broad (±5 cm) number of leaves per peant 26±2. Cured leaf is towards lemon yellow colour.	Short stured; medium cast; narrow leaf shape (55 × 20 cm) (±5 cm); No. of leaves 20 ± 2 per plant. The distinct character is that it gives bright brown colour cured leaf.
(c) **Days to 50% flowering**	70 days from transplanting	60 days from transplanting
(d) **Maturity (range in No. of days—seed to seed)**	Medium maturing interval between primings about 7 days.	Slow maturing intervals between primings longer

Average yield under normal conditions (yield in kg/ha) : 1600 to 1800 kg/ha under normal weather conditions (total cured leaf)

Agency responsible for maintaining breeder's seed : Plant Breeding Section, CTRI, Research Station, Hunsur (Karnataka)

Specific recommendation, if any, for seed production : Closer spacing to increase plant population will be advantages for seed production since inflorescence is compact and capsules are medium in size.

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2. **Crop** : Cumin (*Cuminum cyminum* L.)

Variety : RZ-19 (UC-19)

Sponsored by : Senior Breeder (Spices), Department of Genetics & Plant Breeding Rajasthan Agricultural University, Campus, Jobner-303 329 (Rajasthan)

Parentage with details of its pedigree : Developed through recurrent selection, based on progeny testing from a local collection of kekri, Dist. Ajmer, Rajasthan.

Description of the variety/hybrid

(a) **Plant height** : 27.2 to 38.8 cm. (Mean 34.5 cm)

(b) **Distinguishing morphological characters** : Erect plant type with pink flowers, bold, dark, grey coloured, pubescent grains.

(c) **Maturity (range in number of days)** : 120-130 days

(d) **Maturity group (early, medium and late— wherever such classification exists)** : Medium

Description of parents of the hybrid :

(a) Plant height
(b) Distinguishing morphological characters
(c) Days to 50% flowering
(d) Maturity (range in no. of days-seed to seed)

} The variety has been developed through recurrent selection in a location of Kekri, Dist. Ajmer. The local collection had better plants like those of selected but the collection was variable and had many inferior plants some very late. Variation in plant height and plant type were also present.

UC 19 was developed through selection of better plants on the basis of performance of their progeny.

Agency responsible for maintaining breeder's seed : Sr. Breeder, All India Coordinated Research Project on Spices, Deptt. of Genetics & Plant Breeding, SKN College of Agriculture, Campus-Jobner-303 329 (Raj.).

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3. Crop : Fennel (Sonf) (*Foeniculym vulgare* Miller)

Variety : Gujarat Fennel-1 (VC-14-3-3)

Sponsored by : Gujarat Agricultural University, S.K. Nagar, Dantiwada.

Parentage with details of its pedigree : This variety is developed by selection from the germplasm material.

Description of the variety/hybrid :

(a) Plant height : 150 cm.

(b) Distinguishing morphological characters : Tall and bushy type with cream yellow flowers, little bulging at the middle, oblong with less prominent pointed strips on grain and having dark green colour. Therefore, it is preferred to a greater extent.

(c) Maturity (range in No. of days) : 220-230 days

(d) Maturity group (early, medium or late) : Late

Agency responsible for maintaining breeder' sseed : Research Scientist (Spices), GAU, Spices Research Station, Jagudan-382 710, Distt. Mehsana (Gujarat).

Specific recommendations, if any, for seed production. : Jagudan Station is capable of producing large scale seed production.

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4. Crop : Ginger (*Zingiber officinale* Rosc) / (Adrakh)

Variety : Suprabha (PGS-35)

Sponsored by : The Vice-Chancellor, Orissa University of Agriculture & Technology, Bhubaneswar.

Parentage with details of its pedigree : A clone selected from Kunduli Local.

Description of the variety/hybrid :

(a) Plant height : 51.8 cm

(b) Distinguishing morphological characters :
Inner core of rhizomes : Whitish yellow
Outer core : Dark whitish yellow
Colour of powder : Fairly white

(c) Maturity (range in number of days) : About 9 months

(d) Maturity group (early, medium or late) : Medium

Agency responsible for maintaining breeder's seed : Breeder, AICRP on Spices High Altitude Research Station (OUAT), Pottangi-764 039, Koraput, Orissa.

Specific recommendations, if any, for seed production : Can produce and supply large scale seed rhizomes.

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5. Crop : Turmeric (*Curcuma longa* L.)

Variety : Roma (PTS-10)

Sponsored by : The Vice-Chancellor, Orissa University of Agriculture & Technolegy, Bhubaneswar.

Parentage with details of its pedigree : A clone selected from "Turmeric Sunder".

Description of the variety/hybrid :

(a) Plant height : 74.2 cm.

(b) Distinguishing morphological characters : Mother rhizomes 2-3, ovoid and plump, fingers with blunt tip having vertical growth nodes covered with brown scale learks, orange yellow flesh, Outer core Yellow, orange yellow powder.

(c) Maturity (range in No. of days) : About 8 months

(d) Maturity group (early, medium or late) : Medium

Agency responsible for maintaining breeder's seed : Breeder (Spices), High Altitude Res. Stn. (OUAT), AICRP on Spices, Pottangi-764 039, Koraput (Orissa).

Specific recommendations, if any, for seed production : OUAT can take up large scale seed production.

ANNEXURE IV

Important features of the Varieties recommended for Notification in the 11th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop	:	Cotton
Name of the Variety	:	G.Cot. Hybrid-8
Parentage	:	G. Cot. 10 × Surat dwarf.
G.Cot. 10	:	Co2 × *G. tomentesum*, an interspecific cross made at Surat from which CO-TOM types were developed. The same was crossed with Indore-2 at Indore which give rise to CII types. KW-66-2096 was isolated from this material at Khandwa. SRT-1 was reselection from this in Gujarat and this released as G.Cot. 10 in 1974.
Surat dwarf	:	Developed by Dr. N.P. Metha, from a selection made by him from non-descript material in 1978.
Breeder/Institute responsible for maintaining breeder's stock	:	Research Scientist (Cotton), Main Cotton Research Station, Gujarat Agricultural University, Surat.
Description of the variety/hybrid :		
(a) Plant height	:	120-140 cms.
(b) Distinguishing morphological characters		
(i) Foliage	:	Light green and hairy.
(ii) Habit	:	Erect with 1 to 3 effective monopodia on main stem. The sympodial branch starts from 5 to 6 nodes. The sympodia are medium in size.
(iii) Leaf characters and colour	:	Small in size, hairy, sected with 3-5 lobes mostly 3 lobes, kobe cut is less than ½. The leaf is light green in colour.
(iv) Flower	:	Petals are light yellow in colour with dark yellow base of each petal.
(v) Pollen		Creamy white in colour.
(vi) Petal spot		Absent
(vii) Boll characters'	:	Roundish in shape, medium in size and mostly of 4 locked.
(c) Maturity (range in no. days). Seeding/ transplanting to flowering seed to seed		
(i) Seeding to flowering	:	50 to 60 days
(ii) Seeding to seeding	:	170 to 190 days

Description of the parents of the hybrid :

Characters		*Female (G. Cot. 10)*	*Male (Surat dwarf)*
(a) Plant height	:	120-140 cms.	100-120 cms.
(b) Distinguishing morphological characters			
(i) Foliage	:	Dark green and hairy	Light green and less hairy.
(ii) Habit	:	Monopodial open growth abit.	Sympodial, dwarf and compact.
(iii) Flowers	:	Petals yellow in colour. No petal spot pollen buff in colour.	Petals whitish in colour. No petal spot. Pollen buff in colour.
(iv) Bolls	:	Roundish and pointed medium in size	Roundish, medium in size and having smooth surface.
(c) Days to 50% flowering	:	75-90 days	60-75 days
(d) Maturity (range in No. of days). Seedling/ transplanting to flowering. Seed to seed			
(i) Sowing to flowering	:	60-70 days	50-55 days
(ii) Sowing to boll opening	:	110-120 days	90-100 days
(iii) Sowing to pulling	:	150-170 days	140-160 days

Two identifiable and distinguishable morphological characteristics of the variety :

Characters		*Hybrid*	*Female*	*Male*
(i) Petal colour	:	Yellow	Yellow	White
(ii) Degree of hairiness on stem	:	Intermediate	Dense hairy	Sparingly hairy
(iii) Presence or absence of brown spots on base of endroecium whorl	:	Practically absent	Present	Practically absent

Yield		
(a) Commercial product	:	*G.Cot Hybrid*-8
Seed Cotton (Av. of trials)	:	2077 1821
(Maximization)	:	3775
Lint yield (Av.)	:	758 665
(Maximization)	:	1378
(b) Seed		
Cotton seed (Av. of trials)	:	1319 1156
(Maximization)	:	2397

2. Crop	:	Nagli (Finger Millet) (*Eleusine coracana* (L.) Gaertn)
Name of the variety	:	Gujarat Nagli-2 (NS-109)
Parentage	:	NS-109 is a selection from local material.
Breeder/Institute responsible for maintaining breeder's stock	:	Research Scientist (Sorghum), Main Sorghum Research Station, Gujarat Agricultural University, Athwa Farm, Surat.
Description of the variety/Hybrid	:	It has very good adaptability in the hilly area of South Gujarat. The grain colour is red brick and preferred by the tribals. The variety is practically free from pests and diseases.
Two identifiable and distinguishable morphological characteristics of the variety	:	It is a tall growing variety. Clums are very thick. Earheads are very large and open. The length of the fingers is larger than that of GN-1.
Yield		
(a) Commercial Product	:	2880 Kg/ha.
(b) Average seed yield	:	1500-2000 kg/ha.

3. Crop	:	Guinea grass (*Panicum maximum* Jacq.) पनिकम मेक्सिमम
Name of the variety	:	PGG-19
Parentage	:	It is an obligate apomict developed from a cross between a sexual line CPI. 63540 × CPI 60013 (Apomict)
Breeder/Institute responsible for maintaining breeder's stock	:	Dr. B.S. Sidhu, Senior Forage Breeder, Department of Animal Sciences, Punjab Agricultural University, Ludhiana.
Description of variety	:	Bold seeded with low degree of seed shattering and better germination and high seedling vigour.
Two identifiable and distinguishable morphological characteristics of the variety	:	(i) Seed husk colour is whitish grey (ii) Slightly hairy at node. (iii) Panicles compact and medium in size. (iv) Bold seed.
Yield		
(a) Commercial product	:	(i) Green fodder yield : 1023.1 q/ha. (ii) Dry matter yield : 229.7 q/ha.
(b) Average seed yield	:	760 kg/ha.

4. Crop	:	Gram (Chickpea) (*Cicer arietinum* L.)
Name of the variety	:	PBG-1 (Tested as GL 83119 in trials)
Parentage	:	GG 578 × NEC 206
Breeder/Institute responsible for maintaining breeder's stock	:	Department of Plant Breeding, Punjab Agricultural University, Ludhiana.
Description of variety/hybrid	:	Plants are tall with erect growth habit and long fruiting branches. It has high degree of resistance to gram blight and wilt complex. It takes 160-170 days to mature in the submontaneous area. It has slightly bold seeds of brownish colour.
Two identifiable and distinguishable morphological characteristics of the variety	:	Plants are tall with erect growth habit and fruiting branches are long. Early in flowering then C 235 or G 543.
Yield :		
(a) Commercial produce	:	—
(b) Average seed yield	:	1600 kg/ha.

5. Crop : Lentil (*Lens culinaris Medic*)

Name of the variety : LL 147

Parentage : PL 284-67 × NP 21. Developed by Pedigree method. **Bulked in F6** generation.

Breeder/Institute responsible for maintaining breeder's stock : Senior Pulses Breeder, Deptt. of Plant Breeding, Punjab Agri. Univ., Ludhiana.

Description of variety /hybrid : The plants are short erect with profused branching. It bears high number of pods and is early in flowering. It matures in 145-155 days. Seeds are bold olive with dark spotting, attractive and possesses good taste and cooking quality. Average yield is 550 kg/acre. This variety recorded grain yield of 1429 kg/ha on the basis of ten trials against 1268 kg/ha by the best check, in the state trials.

Two identifiable and distinguishable morphological characteristics of the variety : Plants are short and erect with profused branching foliage colour is light green. It is early in flowering and maturity than LL 56 seed colour is olive with dark spotting and Cotyledon colour is orange.

Yield:

(a) Commercial product : 1375 kg/ha.

(b) Seed : —

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6. Crop : Maize (*Zea Mays* L.)

Name of the variety: : Gujarat Makai-1

Parentage : It is an early maturing selection from cross 4608 which involves Farm Sameri as one of the parents in crossing. It has white flint grain type which is preferred by the tribal farmers and meets the acceptable quality standards from the farmers view point.

Breeder/Institute responsible for maintaining breeder's stock : Maize Research Station, Gujarat Agricultural University, Godhra.

Description of variety/hybrid

(a) Plant height : 155.85 cms (Average)

(b) *Distinguishing morphological characters*

Stem : Medium thickness and green in colour with occasional purple tinge.

Leaf : Light green, upper leaves semi-erect with medium width, white mid-rib.

Tassel : Green, semi-sparse with central axis thick and conspicuous spike, anther green in colour often pink colour appears.

Silk : Green but purple colour appear quite often.

Ear : Av. ear length, diameter and no. of rows of grains per ear are 14·7 cms, 12·7 cms and 13·8 respectively.

Grain : Creamy in colour, round and medium in shape and size and flint in texture.

(c) Maturity (range in number of days) : Av. days to 50% silking 49·08 days/Seeding/Transplanting to (Kharif) i.e 2·28 days earlier flowerings seed to seed, as compared to Farm Sameri.

(d) Maturity group (early, Medium and late-wherever such classification exists) : 80 to 85 days (early)
C—series

(e) Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/biotypes to be indicated wherever possible. : The strain possesses field tolerance to leaf blight caused by *H. maydis* and downy mildew caused by *Sclerophtherea rayssiae* var. Zeae as revealed by the data recorded in the breeding trials.

Two identifiable and distinguishable morphological characteristics of the variety

Stem : Medium thickness and green in colour with occasional purple tinge.

Leaf : Light green, upper leaves semi erect with medium width, white mid-rib.

Tassel : Green, semi-sparse with central axis thick and conspicuous spike. Anther green in colour often pink colour appears.

Silk : Green but purple colour appear quite often.

Ear : Av. ear length, diameter and no. of rows of grains per ear are 14·7 cms, 12·7 cms. and 13·8 respectively.

Grain: : Creamy in colour, round and medium in shape and size and flint in texture.

Yield :

(a) Commercial product : Grain itself is a commercial product in this Crop.

(b) **Seed** : 25·7% higher than Farm Sameri 2871·00 kg/ha under rainfed.

7. Crop	Niger (*Guizotia abyssinica Cass*)
Name of the variety	RCR-317
Parentage	Selection from local type.
Breeder/Institute responsible for maintaining breeder's stock	Research Scientist (Oilseeds), Gujarat Agricultural University, Junagadh (Gujrat).
Description of the variety/hybrid	Black Seeded branched type, early maturity
Two identifiable and distinguishable morphological characteristics of the variety.	Plant height 110-115 cm, black seeded, branched type etc.
Yield:	
(a) Commercial product	40·2% Oil
(b) Seed	321 kgs/ha.

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8. Crop	Rice (*Oryza sativa* Linn)
Name of the variety	'Hari' (TR-RNR-21)
Parentage	A pedigree selection from the cross IR-8 × TR-5.
Breeder/Institute responsible for maintaining breeder's stock	(1) Rice Section, Agri. Res. Institute APAU, Rajendranagar, Hyderabad. (2) Nuclear Agriculture Division, BARC, Bombay.
Description of variety/Hybrid	Semi-dwarf (93 cm); erect, compact and non-lodging plant type with dark green foliage; anthocyanin pigment absent; grain long slender and straw yellow in colour; kernel flinty, white, translucent and non-glutenous; white belly absent. Kernel length: 7·35 mm; L/B ratio of kernel: 3·54; 1000 grain wt.: 20·2 g; protein content 7·14%; Hulling, milling and head recovery: 80, 74.5 and 68% respectively; cooking quality : good.
Two identifiable and distinguishable morphological characteristics of the variety,	'Hari' has long, erect and dark green foliage, the flag leaf stands far above the panicle and remains green even after grain maturity.
Yield:	
Average yields	
(a) Commercial product	Research Stations : 6057 kg/ha (113% over Jaya)
(b) Seed	Farmers Fields : 3843 kg/ha. (119% over local and standard checks)

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9. Crop	Raya (*Indian mustard*).
Name of the variety	RL 1359
Parentage	RLM 514 × Varuna.
Breeder/Institute responsible for maintaining breeder's stock	Dr. K.S. Labana, Senior Scientist (Oilseed), Department of Plant Breeding PAU, Ludhiana.
Description of variety/hybrid	The leaves are small, dark green, smooth and form a narrow angle with the main stem. It has thick stem with the less number of primary and secondary branches. The plant type is erect. It is shorter in stature than RLM 619 by 33 cms. It takes 48 days to 50% flowering and 147 days to maturity. Siliquae are long, flattened with hard chaff which provide resistance to shattering. 1000 seed weight is 6.6 gm with 43% oil content.
Two identifiable and distinguishable morphological characteristics of the variety	(a) Place of seed development the siliqua is conspicuously visible (just like breed formation) (b) Primary and secondary branches remain dark green at maturity.
Yield:	
(a) Commercial product	2125 kg/ha.
(b) Seed	1500 kg/ha.

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10. Crop	Cotton (*G. hirsutum* L.)
Name of the variety	Jawahar Kapas-3 (68 KH 33-1146).
Parentage	A-56-347 × Acala 44-2.
Breeder/Institute responsible for maintaining breeder's stock	Dr. K.C. Mandloi, Sr. Scientist (Cotton), JNKVV, Regional Research Station, Khandwa (M.P.).
Description of the variety/hybrids	Semi, Non-Hariy, Flower dull white pollen yellow, leaves littleless pointed and broader than Khandwa-2.

Two identifiable and distinguishable morphological characteristics of the variety : (i) Semi compact plant.
(ii) Pollen yellow.
(iii) Leaves non-hairy broad and little less pointed.

Yield: : 1000 kgs/ha.

(a) Commercial product : Lint 250 kgs.

(b) Seed : Seed 750 kgs.

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11. Crop : Bread Wheat (*Triticum aestivum*)

Name of the variety : PBW 154

Parentage : HD 2160-HD 2177

Breeder/Institute responsible for maintaining breeder's stock : Punjab Agriculture University, Ludhiana.

Description of variety/hybrid : PBW 154 is a high yielding disease resistant variety suitable for timely sown irrigated high fertility conditions.

Two identifiable and distinguishable morphological characteristics of the variety : PBW 154 is a double dwarf variety of wheat with non-hairy red glumes. The ears are fully awned. The grains are very bold.

Yield :

(a) Commercial Product : 21 quintals per acre.

(b) Seed : 21 quintals per acre.

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12. Crop : Bajra (*Pennisetum americanum* (L) *Leek*)

Name of the variety : HHB 60 (MH-224)

Parentage : MS 81A × H 77/833-2

Breeder/Institute responsible for maintaining breeder's stock : Male : HAU, Hisar.
Female : ICRISAT, Hyderabad.

Description of variety/hybrid : High tillering, medium thin stem, medium narrow leaves, dense candle shaped head, medium grain size, plant height approximately 200 cm, matures in 74-76 days.

Description of parents of the hybrid : The female parent MS 81A is a highly stable male-sterile line with high degree of downy mildew resistance and desirable agronomic attributes. H77/833-2 the pollinator parent possesses very high tillering capacity, thin stem, small thin heads. It is taller than the female parent which is an added desirable feature in a pollinator. It possesses high degree of downy mildew and drought tolerance.

H77/833-2 is earlier by 10-15 days in flowering than the femal parent MS 81A. However, it has very high tillering and pollen producing capacity No seed set problem in the large scale seed production plot grown at the Central State Farm, Melchangam has been encountered. In order to have a foolproof mechanism, stagger planting on the periphery after about 5-7 days of the main planting would ensure normal seed set.

Two identifiable and distinguishable morphological characteristics of the variety :

Male Parent : High tillering, thin stem, small than lanceolate heads, light green narrow leaves.

Female Parent : d_2 gene dwarf is a well established male steriles line.

Yield :

(a) Commercial Product : 2719 kgs/ha.

(b) Seed : 600-800 (Approx.)

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13. Crop : American Cotton (*Gossypium hirsutum* L.)
Name of the variety : HS-45

Parentage : H 777×M-8

Breeder/Institute responsible for maintaining breeder's stock : Deptt. of Plant Breeding, HAU, Hisar.

Description of variety/hybrid :

(a) Habit (compact, spreading bushy etc.)	:	120 to 160 cms and had tendency to go taller in fertile soils.
(b) Distinguishing morphological features	:	2 to 5 strong monopodia, spreading type, leaves medium size, hairs on stem and leaves, flower cream & pollen cream in colour, bolls medium in size with pointed tip.
(c) Maturity in days (from seed to seed)	:	160 to 190 days
(d) Reaction to major disease in field & also controlled condition (reaction to physiological strain races/golybes to be indicated).	:	Field resistance to black arm.
Two identifiable and distinguishable morphological characteristics of the variety	:	(1) HS-45 has broader flat with lesser cut leaves than H 777. (2) HS-45 has roundish and flattened bolls as against oblong and pointed bolls of H 777.

Yield :

Average cotton	:	1951 kg/ha.
Lint yield	:	664 kg/ha.

ANNEXURE V

The details of important features of the Varieties recommended for Notification

1. Crop : Toria (*Brassica campestris* Var *toria*)

Variety : Panchali (TWC-3)

Parentage : The variety has been developed as composite, the parents involved in cross were (K1 × T99) × (ITSA × B54) × (T9 × Karmaha)

Breeder/Institute responsible for maintaining breeder stock. : Pulses and Oilseeds Research Station, Berhampore, West Bengal.

Description of the variety/hybrid : Plant medium spreading; angle of branching is obtuse; leaf sessile, lobed, green, seed is medium.

Two identifiable and distinguishing morphological character of the variety : (a) Plant medium spreading; angle of branching obtuse
(b) Leaf sessile, lobed green.

Yield (Seed) :

Potential Yield : 1400 kg/ha.

Average yield : 1200 kg/ha.

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2. Crop : Paddy

Variety : Satya (RNR 1446) (IET 7720)

Parentage : Tella Hamsa/Rasi

Breeder/Institute responsible for maintaining breeder seed stock : Rice Breeder, Agril. Research Institute, Rajendranagar, Hyderabad.

Description of the variety :

(1) Cultural Adaptability : (Wet land) Irrigated
(2) Crop season & duration : Kharif : 115 days
Rabi : 130 days
(3) Height : 100 cms.
(4) Ear bearing tillers : 8 to 10 tillers
(5) Habit of growth : Compact, erect plant type
(6) Leaves : Green, erect.
(7) Hairiness : Normal
(8) Boot leaf : Erect
(9) Leaf sheath colour : Green
(10) Leaf blade : Green
(11) Leaf juncture : Green
(12) Internode : Green
(13) Node : Light green
(14) Auricle : Green
(15) Peduncle : Green
(16) Panicle type : Compact drooping.
(17) Panicle length : 21 to 23 cms.
(18) No. of grains/panicle : 105 to 115 grains
(19) Awns : Absent
(20) Colour : White
(21) Kernel shape & size : Long slender
(22) Kernel colour : Light reddish
(23) 1000 grain weight 25.0 gms.

(24) Hairiness on the grain	Normal
(25) Hull	Green, ripening to straw
(26) Apiculus	Green
(27) Empty glumes	Green
(28) Stigma	Green
Two identifiable and distinguishable morphological characteristics of the variety	(1) Exerted ear-head. (2) Flag leaf erect.
Yield :	
(a) Commercial product	6000 kg/ha.
(b) Seed	

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3. Crop	Paddy (*Oryza sativa B*)
Variety	Saleem (RNR 29692) (IET 5709)
Parentage	GEB24/Sigadis/IR8/RNR 8102
Breeder/Institute responsible for maintaining breeder seed stock	Rice Breeder, A.R.I., Rajendranagar.
Description of the variety/hybrid :	
Cultural Adaptability	Wet land irrigated
Crop, season, duration	Kharif : 130 days Rabi : 145 days
Height	98 cms.
Ear bearing tillers	10 to 14 tillers per hill
Habit of growth	Compact, erect plant type with stiff straw green.
Leaves	Green
Hairiness	Absent
Boot leaf	Erect
Leaf sheath colour	Green
Leaf blade	Green
Leaf juncture	Green
Internode	Green
Nodes	Green
Auricle	Green
Peduncle	Green
Panicle type	Drooping
Panicle length	23 to 24 cms.
No. of grains/panicle	120 to 130 grains/panicle
Awns	Absent
Awn colour	Absent
Hairiness on the grain	Normal
Kernel shape & size	Long slender
Hull	Green ripening to straw
Apiculus	Green
Empty glumes	Green
Stigma	Green
Kernel colour	White
1000 grain weight	26.5 gms.
Two identifiable morphological characteristics of the variety	1. Erect flag leaf 2. Stiff-straw with good tillering.

Yield :		
(a) Commercial product	:	6500 kgs/ha.
(b) Seed		

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4. Crop	:	Paddy (*Oryza sativa* L.)
Variety	:	Mandya Vijaya
Parentage	:	Sona/Mahsuri
Breeder/Institute responsible for maintaining breeder seed stock	:	Rice Co-ordinator V.C. Farm, Mandya.
Description of the variety/hybrid	:	Semi-tall height. Dense panicles with medium size spikelets, brownish in colour.
Two identifiable and distinguishable morphological characteristics of the variety	:	Stem and Foliage green in colour. Medium, compact panicle with densely placed brownish spikelets. Rice-transluscent medium slender with no abdominal chalkiness.
Yield :		
(a) Commercial Product :		
Paddy	:	5500-6500 kgs/ha.
Rice	:	4125-4875 kgs/ha.
Straw around	:	6000 kgs/ha.

सत्यमेव जयते

Minutes of the Twelth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 13th February, 1989 under the Chairmanship of Dr. R.S. Paroda, DDG (CS), ICAR

The list of the participants is annexed as Annexure I.

2. The Chairman welcomed the members and stated that at the time of despatch of Agenda Notes of the 12th Meeting, no proposal was pending with the Secretariat of the Central Sub Committee on Crop Standards, Notification and Release of Varieties. He reiterated that no good variety will be delayed for release and notification and, therefore, it has already been decided to convene the meeting of the Committee at least once in every four months. If proposals are received in sufficient number, the meeting could be convened even earlier than the suggested frequency.

3. Chairman also invited the views of the participants on delay in the availability of data from minikit trials and consequential delay in the release and notification of the varieties. The majority of the members were of the opinion that either data are not at all submitted or inordinate delay is made in submission of the data of minikit/adaptive trials. It has also been observed that sometime due to various problems, the early sown varieties are tested in late sown conditions and varieties meant for unirrigated conditions are tested in irrigated conditions or *vice-versa* and, hence, data generated under non-recommended conditions did not serve any purpose. To withhold good varieties from release and notification for want of data from minikit/adaptive trials may not serve any purpose except that a good variety would be withheld from the farmers. However, the Committee was quite conscious of the importance and purpose of the system of minikit/adaptive trials and, therefore, recommended that the present system may be re-examined so that necessary improvement could be made. Till the existing system was improved and regular flow of authentic data was ensured, the testing of the varieties under minikit/adaptive trials would not be a pre-condition for release and notification provided data otherwise generated in the coordinated trials merit such consideration.

4. After this, the regular Agenda Items were taken for discussion. The decisions of the Committee on each item is indicated as follows:—

Item No. 1: Confirmation of the 11th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 11th October, 1988.

5. The minutes of the earlier Meeting were confirmed.

Item No. 2: Review of action taken on the Minutes of the 11th meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

6. The position indicated in the Agenda Notes was noted by the Committee/participants.

Item No. 3: Release of the Varieties.

7. Twenty one proposals of various varieties of different crops were considered for release and notification. The observations of the Central Sub Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated in the Tables given below:—

Table No. 1 : Details of the varieties recommended for release and notification

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra	Pusa Safed	(i) Recommended for release for cultivation in Gujarat, Maharashtra, Andhra Pradesh, Haryana, Tamilnadu and Delhi. (ii) Recommended for release subject to the receipt of the clarification from Sponsoring Authority whether it is synthetic or composite variety.
2.	Bajra	MBH-136	Recommended for release for cultivation in Maharashtra, Andhra Pradesh, Karnataka, Tamilnadu and Madhya Pradesh.
3.	Cauliflower	Pant Gobhi-3	Recommended for release for cultivation in Zone 4 (Ludhiana and Delhi Centre) i.e. Northern Plains.
4.	Cabbage	Pusa Mukta	Recommended for release for cultivation in plains as well as Hilly areas of the country.
5.	Garlic	Agrifound White	Recommended for release for cultivation throughout the country especially in Western, Southern and Central Parts of India.
6.	Guniea Grass	PGG-14	(i) Recommended for release for cultivation in Central Zone. (ii) The variety was recommended for release subject to the verification of data of location trials by Project Coordinator.

1	2	3	4
7.	Paddy	Dharitri (IET-6272)	(i) Recommended for release for cultivation in Orissa, Assam, Tripura and Madhya Pradesh. (ii) Recommended for release subject to the confirmation of reported disease resistance in comparison to the Savitri by Project Director
8.	Sunflower	MSFH-17	Recommended for release for cultivation in all Sunflower growing areas of the country.
9.	Toria	TL-15	Recommended for release for cultivation in the high altitude areas of HP for irrigated summer planting.
10.	Wheat	PBW-154	Recommended for release for cultivation in Northern Plain Zone.
11.	Wheat	PBW-175	Recommended for release for cultivation in Northern Plain Zone.
12.	Wheat	PBW-226	Recommended for release for cultivation in Northern Plain Zone.
13.	Wheat	HS-207	Recommended for release for cultivation under late sown rainfed conditions of lower and mid-hills (upto 7,000 ft.) of J & K, Himachal Pradesh and Uttar Pradesh.
14.	Wheat	HS-240	Recommended for release for cultivation in lower and mid-hills (up to 7,000 ft. above sea level) of Northern Hills Zone comprising the States, Jammu & Kashmir, Himachal Pradesh and Uttar Pradesh.

8. The above varieties are also recommended for notification under Section 5 of the Seeds Act except varieties mentioned at Sl. No. 9 and 10 as these varieties have already been notified vide S.O. No. 19(E) dated 14-1-82 and S.O. No. 1135(E) dated 1-12-88 respectively.

9. The details regarding important features of the above varieties are given in Annexure II.

Table No. 2 : Details of the varieties recommended only for release

S.No.	Crop	Variety	Remarks
1.	FCV Tobacco	Hema G.11/1	Recommended for release for cultivation in black soil of Andhra Pradesh.

10. The details of the above variety regarding important features is given in Annexure II.

Table No. 3 : Details of the varieties not recommended for release and notification for want of more information

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Barley	BHS-52	The proposal may be resubmitted alongwith the data of agronomic and minikit trials. Also disease data under epiphytotic conditions be provided.
2.	Barley	Karan-4	(i) The variety has not been tested against a common check at all places and in different years. Therefore, it may be tested uniformly against a rainfed check at various locations representing rainfed conditions. (ii) Variety may also be tested under epiphytotic conditions for disease resistance. (iii) Variety may be tested in more locations in Rajasthan, Punjab and Haryana. (iv) More agronomic data need to be generated.
3.	Pea	PM-2	(i) The proposal might be resubmitted alongwith data on reported earliness and resistance to powdery mildew disease. (ii) It may also be indicated how variety differs morphologically from Arkel.
4.	Scarlet Linum	F-80-12	The proposal might be resubmitted along with the recommendations of the Workshop and data generated in the coordinated trials.
5.	Tomato	La-Bonita	(i) The proposal might be resubmitted alongwith detailed data on diseases and pests. (ii) The data regarding weight of fruits per plant, number of fruits per plant and weight of 10 fruits might be rechecked.

11. The Sponsoring Authorities are advised to resubmit the proposal (100 copies) alongwith desired information

Table No. 4 : Details of the varieties which could not be recommended for release and notification

S.No.	Crop	Variety	Remarks
1.	Barley	Karan-92	(i) It is very difficult to evaluate the proposal due to inconsistancy in the checks used at different locations in different years. (ii) The variety has not been tested in epiphytotic conditions for disease reactions. (iii) The variety has not established distinct superiority against other varieties. Data show that even some qualifying and identified varieties in the pipeline are superior to Karan-92. This needs clarification.

Item No. 4: Notification of the varieties.

12. Twenty two proposals of different varieties have been considered for notification under Section 5 of the Seeds Act. The recommendations of the Committee is indicated in the Tables below:

Table No. 1 : Details of the varieties recommended for notification for entire country

S.No.	Crop	Variety
1	2	3
1.	Barnyard millet	Chandan
2.	Cotton	Vikas
3.	Finger millet (Ragi)	KM-13
4.	Foxtail mille	Nischa
5.	Paddy	Bhuban IET-7804
6.	Paddy	Ananga IET-7433
7.	Paddy	Srabani IET-9946
8.	Paddy	Lalat IET-9947
9.	Paddy	Samalei IET-3350
10.	Paddy	Heera IET-10973
11.	Paddy	Kalyani-II IET-10970
12.	Paddy	Tara IET-9215
13.	Paddy	Vanaprabha IET 9804
14.	Paddy	Kshira IET-7328
15.	Paddy	Padmini IET-10561
16.	Paddy	Moti IET-9170
17.	Paddy	CR-1014
18.	Paddy	Gayatri IET-8022
19.	Paddy	IET-8548
20.	Paddy	IET-10222
21.	Sesamum	Vinayak (Sel. 14)

13. The details regarding important features of above varieties are given in Annexure III.

Table No 2 : Details of the varieties not recommended for notification for want of more information

S.No.	Crop	Variety	Remarks
1.	Paddy	Kalashree (IET-10223)	The proposal might be resubmitted alongwith data generated in All-India Coordinated Trials.

14. The Sponsoring Authority is advised to resubmit the proposal (100 copies) alongwith desired information.

Item No. 5: Morphological characters of Maize Inbred lines.

15. The position indicated in the Agenda Notes was noted by the Committee and recommended that all certification agencies may also note the given description of the various lines/parents of Maize hybrids for certification of the seeds. Annexure IV.

Miscellaneous Items:

(i) Notification of the varieties submitted by State Governments of Tamilnadu and Andhra Pradesh

16. The proposals of 8 paddy varieties submitted by Government of Tamilnadu were considered in the 11th Meeting of the Central Sub Committee on Crop Standards, Notification and Release of Varieties and it was decided that a Committee might visit to evaluate the performance of these varieties in the field. Accordingly, Government of Tamilnadu was requested to indicate the appropriate date for field visit. Now, Government of Tamilnadu has reported that most of the varieties are not presently in the field but these varieties have already entered into coordinated trials and their IET numbers were indicated. The Project Director (Rice) stated that he had performance report of these varieties based on the data generated in the coordinated trials. The detail of the varieties is indicated as follows:

S.No.	Strain	IET No.	Year of entry
1.	Paddy PMK-1	11669	1988
2.	Paddy MDU-2	9353	1984
3.	Paddy TPS-1	9412	1986-87
4.	Paddy ADT-37	10391	1986
5.	Paddy White Ponni Improved	10434	1986
6.	Paddy TPS 2	10437	1986-87
7.	Paddy ADT 39	7406	1980
8.	Paddy ADT 38	10435	1986

17. Similarly, some proposals were also received from Govt. of Andhra Pradesh for consideration of their Notification under Section 5 of the Seeds Act. The Project Director (Rice) stated that he had also information with him about the performance of these varieties in the coordinated trials. The Committee authorised the Chairman to take decision about the notification of these varieties based on the information submitted by Project Director (Rice). The detail of the paddy varieties submitted by Govt. of Andhra Pradesh is given as under:

S.No.	Name of the Crop	Name of the variety
1.	Rice	Chaitanya (MTU-2067)
2.	Rice	Tikkana (NLR-27999)
3.	Rice	Sambamahsuri (BPT 5205)
4.	Rice	Pinakini (NLR 9672-96)

18. The details of the above varieties is given in Annexure V.

ANNEXURE I

List of participants who attended the 12th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held at 2.00 P.M. on 13th February, 1989 under the Chairmanship of DDG (CS), ICAR, Krishi Bhavan, New Delhi

1. Dr. R.S. Paroda, *Chairman*
   Deputy Director General (CS),
   Indian Council of Agril. Research,
   Krishi Bhavan, New Delhi.

2. Dr. K.R. Chopra,
   Director Research & Production,
   Mahendra Hybrid Seed Co.,
   Post Box. No. 52, Jalna.

3. Shri Randhir Singh,
   V. Matarshyam, Distt. Hissar,
   Haryana.

4. Shri K.M. Hooda,
   375/16, Hari Niwas, Jajjar Road,
   Rohtak, Haryana.

5. Shri Ramsagar Upoadhyay,
   Vill. P.O. Rajatalab,
   Varanasi (U.P.)

6. Shri B.M. Sharme,
   Joint Commissioner pulses,
   Ministry of Agri., Deptt. of Agriculture &
   Coopn., New Delhi.

7. Shri Juggal Kishore,
   General Manager (Production),
   National Seeds Corporation Ltd.,
   Beej Bhavan, Pusa Complex,
   New Delhi-12.

8. Shri J.N. Johri,
   Addl. Director of Agriculture,
   Rajasthan, Jaipur.

9. Shri T. Thanikachalam,
   Jt. Director of Agriculture (SSF)
   Govt. of Tamilnadu, Madras-5.

10. Shri D.P. Singh,
    Dy. Director of Agriculture, Bihar, Patna.

11. Shri B.S. Gill,
    Joint Director of Agriculture, Punjab.

12. Shri R.S. Malik,
    Joint Director of Agriculture, Haryana,
    Chandigarh

13. Shri S.B. Akhegaonkar,
    Dy. Director Seeds Certification,
    Pune,

14. Shri S.K. Sindhwani,
    Director,
    Haryana State Seed Certification Agency,
    Chandigarh.

15. Shri. B.U. Modi,
    Director,
    Gujarat State Seed Certification Agency,
    Ahmedabad.

16. Shri Jaswant Singh,
    Divisional Seed Certification Officer,
    Kashmir.

17. Shri Basudeo Ram,
    Seed Certification Officer,
    Patna, Bihar.

18. Dr. U.B. Singh,
    Director, Seed Certification, Rajasthan,
    Jaipur.

19. Dr. Prem Singh Gill,
    Director Punjab State Seed Certification
    Authority, Chandigarh.

20. Dr. C.R. Hazra,
    Project Coordinator (Forage Crops),
    I.G.F.R.I., Jhansi-284003.

21. Shri H.S. Gill,
    Project Coordinator (Veg.) Crops,
    IARI, New Delhi.

22. Shri E.A. Siddeq,
    Project Director, DRR, Hyderabad.

23. Shri Mahabul Ram,
    IARI, Regnal Krnal.

24. Dr. K. Mohan Naidu.,
    Director Sugarcane Breeding Instt.
    Coimbatore, Tamil Nadu.

25. Shri J.P. Tandon,
    Project Director (wheat), IARI.

26. Shri Bhag Mal,
    Project Coordinator, New Delhi.

27. Shri V. Ranga Rao,
    Project Director (Oilseeds),
    Directorate of Oilseeds Research,
    Hyderabad.

28. Dr. S. Lal,
    Project Director,
    Director of pulses Kanpur.

29. Shri M. Rai,
    Asstt. Director General (Seeds), ICAR,
    New Delhi.

30. Shri P.N. Bahl,
    ADG (FC), ICAR, New Delhi.

31. Shri B.S. Panwar,
    CIF, Punjab.

32. Shri N.S. Tunwar,
    DC (QC), Deptt. of Agri. Coopn.,
    Ministry of Agriculture, New Delhi.

33. Shri M.S. Shukla,
    DSO (QC)

34. Shri D.S. Mishra,
    STA (Seeds)

ANNEXURE II

The details of the important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Twelfth Meeting held on 13th February, 1989

1. Crop	:	Bajra (*Pennisetum americanum*)
Variety	:	Pusa Safed Bajra (MWP-30)
Sponsored by	:	Indian Agricultural Research Institute, New Delhi-110 012
Parentage with details of its pedigree	:	Composite variety consisted of 9 homozygous inbred lines from India and Africa.
Breeding method	:	Mass selection
Description of the variety :		
(a) Plant height	:	195 cm
(b) Distinguishing morphological characters	:	Grain yellowish white, medium grain, size. Anther colour yellow. Ear compact Medium in size.
(c) Maturity (range in number of days) seedling/ transplanting to flowering, seed to seed	:	Days to 50% flowering—55 days Maturity seed to seed—86 days
Average yield under normal conditions (yield in kgs/hectare)	:	2088 kg
Agency responsible for maintaining breeder seed	:	Indian Agricultural Research Institute, New Delhi and AICPMIP, Pusa.

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2. Crop	:	Bajra (Pearl Millet) (*Pennisetum americanum*)
Variety	:	MBH-136 (MH-123)
Sponsored by	:	The Project Coordinator (Pearl Millet), AICMIP, College of Agriculture, Pune - 411 005.
Institution or agency responsible for developing variety (with address)	:	Research Department, Maharashtra Hybrid Seeds Company Ltd., P.B, No. 27, Sardar Patel Road, Jalna - 431 203 (M.S.).
Parentage with details of its pedigree	:	Mahyco MS No. 2 × PL No. 6
Description of the hybrid :		
(a) Plant height	:	160 to 165 cms.
(b) Distinguishing morphological characters	:	(1) No. of tillers : 5 to 7 (2) Stem colour : Green (3) Anther colour : Yellow (4) Earhead length : 30 to 35 cms. (5) Earhead girth : 10 to 20 cms. (6) Earhead character : Conical and compact (7) Fodder quality : Good (8) Presence of Bristles : Yes, pink colour and medium length.
(c) Maturity (Range in number of days)	:	80 days
(d) Maturity Group	:	Medium to early

Description of parents of the hybrid :

		Female	*Male*
Pedigree		Mahyco *M. S*-No.2	*PL No. 6*
(a) Plant height	:	180 to 185 cms	160 to 165 cms
(b) Days to 50% flowering	:	45 to 50 days	55 to 60 days
(c) Maturity (range in number of days)	:	75 to 80 days	90 to 95 days
(d) No. of tillers	:	3 to 4	6 to 8
(e) Earhead girth	:	10 to 12 cms	5 to 7 cms
(f) Earhead length	:	30 to 35 cms	15 to 25 cms

(g) Earhead shape	Conical	Conical
(h) Presence of bristles	Yes	No
(i) Colour of bristles	Pink	—
(j) Colour of earhead	Bluish pink of matured earhead	Green
(k) Grain characters	Bold grain pearly shinning slate, 1000 grain weight is 10 to 12 gms.	Medium green yellowish 1000 grain weight is 8 to 10 gms.
(l) Seed yield/ha	10 to 12 qtls	6 to 10 qtls
(m) Colour of node	Green	Green
(n) Presence of leaf	Smooth	Smooth
(o) Colour of leaf	Light yellowish	Bluish green
Average yield under normal conditions (yield in kgs/ha)	25 to 30 Qtls/ha	
Agency responsible for maintaining Breeder seed	Maharashtra Hybrid Seeds Co. Ltd., Post Box No. 27, Sardar Patel Road, Jalna - 431 203, Maharashtra (India).	

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3. Crop	Cauliflower (*Brassica oleracea* var. *botrytis*)
Variety	Pant Gobhi-3 (78-1-S)
Sponsored by	G.B. Pant University of Agriculture & Technology, Pantnagar
Parentage with details of Pedigree	A synthetic of 8 lines
Description of the variety :	
(a) Plant height	15 cm (stem length)
(b) Distinguishing morphological characters	Relatively long stem/sparse, semi-erect, leaves, hemi sperical, creamish white medium compact non-ricy curds.
(c) Maturity :	
Nursery sowing to curd availability	09-132 days with av. of 117 days
Transplanting to curd availability	90 days
Seed to seed	300 days
(d) Maturity group	IA i.e. September maturity group (early cauliflower)
Average yield under normal conditions	120 qtls./ha (net marketable curds excluding stalk and outer leaves)
Agency responsible for maintaining breeder seed	G.B. Pant University of Agriculture & Technology, Pantnagar

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4. Crop	Cabbage (*Brassica oleracea*) L. var. *capitata*
Variety	Pusa Mukta (Sel. 8)
Sponsored by	Indian Agricultural Research. Institute, Regional Station, P.O. Katrain, Kulu Valley (H.P.)
Institution or agency responsible for developing variety (with address)	—Do—
Parentage with details of its pedigree	Selection from a cross between EC. 24855 and EC. 10109. The variety has been developed by mass pedigree method of selection.
Description of the variety :	
(a) Plant height	Short stemmed, low in height
(b) Distinguishing morphological characters	Short stalked plant with medium frame; light green, non waxy medium sized leaves with wavy margin having puckered leaf blade, the top wrapper leaf is slightly loose; head slightly flatish but very compact weighing 1.25 kg. to 2 kg; matures about a week later than Golden Acre.
Agency responsible for maintaining breeder seed	IARI, Regional Station, P.O. Katrain, Kulu Valley (H.P.)

5. Crop	Garlic (*Allium sativum.* L.)
Variety	Agrifound White (G-41)
Institute or agency responsible for developing varieties (with address)	A.A.D.F., Regional Research Station, Sinnar, Nasik
Parentage with details of its pedigree	Selection from garlic locally grown in Biharsharif (Nalanda), Bihar.
Description of the variety :	
(a) Plant height	80 - 85 cm.
(b) Distinguishing morphological characters	Bulbs are compact, silvery White skin with cream colour flesh. Big cloves No. of cloves 20-25 per bulb. Diameter of bulb 3.50 to 4.00 cm. Size index of bulbs 12-15 cms.
(c) Maturity (range in No. of days) Seedling/ transplanting to flowering. Seed to seed	150 - 160 days
Average yield under normal conditions (yield in q/ha)	130 - 145 q/ha
Agency responsible for maintaining breeder seeds	Associated Agricultural Development Foundation, New Delhi

6. Crop	Gunica Grass (*Panicum maximum Jacq*)
Variety	PGG-14
Institute or Agency responsible for developing variety (with address)	Deptt. of Animal Science, Punjab Agriculture. University, Ludhiana
Parentage with details of its pedigree	It is an obligata apomictic variety developed from a cross between a sexual line C.P.I. 63540 and an apomictic line C.P.I. 60013.
Breeding method	Hybridization of sexual × apomictic plants. Selection of apomictic plants in early generations to utilize heterosis.
Description of the variety :	
(a) Plant height	106.7 cm
(b) Distinguishing morphological characters	(i) Panicle whitish-green in colour and more compact than Hamil (ii) Flowering earlier than Hamil (iii) Leaf sheath more hairy than Hamil (iv) Seed bolder than Hamil
(c) Maturity (range in No. of days) Seedling/ Transplanting to flowering, seed to seed	First fodder cutting is ready in 55 days and subsequent cuttings are availabl at an interval of 25-30 days. The seed matures in 75 days after sowing or after 50 days of each cutting.
Average yield under normal conditions (yield in kgs/per hectare)	(i) Green fodder yield : 932.4 q/ha (ii) Seed yield : 7.0 q/ha.
Agency responsible for maintaining breeder seed	Punjab Agriculture University, Ludhiana, Punjab

7. Crop	Paddy (*Oryza sativa*)
Variety	Dharitri (IET-6272) (CR 210-1017-607)
Institution or Agency responsible for developing variety (with address)	Central Rice Research Institute, Cuttack - 753 006 (Orissa)
Parentage with details of its pedigree	It is a selection from the cross Pankaj × Jagannath
Description of the variety :	
(a) Plant height	105 to 110 cm.
(b) Distinguishing morphological characters	Medium dwarf, stiff, strawed, non-lodging till maturity. The grain is short bold type, all parts green.
(c) Maturity (range in No. of days) Seedling/ transplanting to flowering, seed to seed	145-160 days depending upon transplanting time
Average yield under normal conditions (yield in kgs/ha)	3.5 to 4.5 tons/ha
Agency responsible for maintaining breeder seed	Central Rice Research Institute, Cuttack - 753 006 (Orissa)

8. Crop	Sunflower (*Helianthus annuus* L.)
Variety	MSFH-17
Institution or Agency responsible for developing the variety (with address)	Maharashtra Hybrid Seeds Co. Ltd., Sardar Patel Road, P.O. Box 27, Jalna - 431 208 (MS).
Parentage with details of its pedigree	Female MHS-79 Male MHR-46
Description of hybrid :	
(a) Plant height	200 to 210 cms
(b) Distinguishing morphological characters	Erect heads, seed coat is slightly black and with white faint stripes
(c) Maturity (range in No. of days) seeding/transplanting to flowering, seed to seed	85 to 88 days
(d) Maturity Group (Early, medium and late whenever such classification exists)	Medium maturity

Description of parents of the hybrid :

Description	*Female (MHS-79)*	*Male (MHR-46)*
(a) Plant height	160 to 170 cms	120 to 130 cms
(b) Distinguishing morphological characters	Brown colour seed coat, monohead type.	Black colour, small size seed, branching type.
(c) Days to 50% flowering	58 to 60 days	55 to 58 days
(d) Maturity (range in number of days, seed to seed)	88 to 90 days	80 to 85 days
(e) Is there any problem of synchronization? If yes, methods to overcome it	For organising seed production programme male need to be planted after 8-10 days of female planting which gives proper synchronization.	

Average yield under normal conditions (Yield in kg/ha)	1700 to 1900 kgs/hectare
Agency Responsible for maintaining breeder seed	Maharashtra Hybrid Seeds Co. Ltd., Jalna

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9. Crop	FCV tobacco
Variety	Hema (G. 11/1)
Institution or agency responsible for developing variety (with address)	(i) Central Tobacco Research Institute, Rajahmundry - 533 105 (A.P.) (ii) Central Tobacco Research Institute, Research Station, Guntur - 533 004 (A.P.).
Parentage with details of its pedigree	A cross between two vigorous plants found in black soils of West Godavari and light soils of Jeddangi in East Godavari Distt.
Description of the variety :	
(a) Plant height	153 cms (upto crow foot capsule)
(b) Distinguishing morphological characters	Tall, open habit, lanceolate leaves medium maturity, puckered surface, margin entire, medium auricle development, medium venation. It produces about 21 curable leaves per plant and the area of the leaf measuring about 622 sq. cms.
(c) Maturity (range in No. of days) seedling/transplanting to flowering, seed to seed	55 to 60 days after transplantation
Average yield under normal conditions (yield in kgs/hectare)	1600 to 1800 kg per ha.
Agency responsible for maintaining breeder seed	CTRI Research Station, Guntur.

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10. Crop	Toria (*Brassica camdestris* var. *toria*)
Variety	TL-15
Institute or agency responsible for developing variety	Department of Plant Breeding, Punjab Agril. University, Ludhiana - 141 004 (Punjab).
Parentage	Selection from local material from Shamgarh, distt. Karnal (Haryana)
Breeding method	Mass selection

	Description of the variety :	
	(a) Plant height	104 cm (from base to the tip of the main shoot of the plant)
	(b) Distinguishing morphological characters	It is earlier in maturity. Branches starts from the base of the plants, laiden with long and bold pods as compared to DK-1 (Std.).
	(c) Maturity (days)	80 days
	(d) Maturity Group	Early
	Average yield under normal conditions	1258 kg/ha.
	Agency responsible for maintaining breeder seed	Deptt. of Plant Breeding, PAU, Ludhiana

11.	Crop	Wheat (*Triticum aestivum* L.)
	Variety	PBW-154
	Institution or agency responsible for developing the variety (with address)	Punjab Agricultural University, Ludhiana
	Parentage with details of its pedigree	HD 2177/HD 2160
	Description of the variety :	
	(a) Plant height	95 cms
	(b) Distinguishing morphological characteristics	PBW 154 is a double-dwarf variety with profuse tillering. The ears are fully awned with non-hairy red glumes. The grains are bold, amber, hard and lustrous. PBW 154 is highly resistant to yellow rust, brown rust and Karnal bunt.
	(c) Maturity range	95 days for flowering, 145 days for seed to seed
	Average yield under normal conditions (Yield in kgs/hectare)	5300 kg/hectare under timely sown irrigated conditions
	Agency responsible for maintaining breeder seed	Punjab Agricultural University, Ludhiana

12.	Crop	Wheat (*Triticum aestivum* L.)
	Variety	PBW 175
	Institution or agency responsible for developing variety	Department of Plant Breeding, PAU, Ludhiana
	Parentage with details of its pedigree	HD 2160/WG 1025 (F6 II 75-112-3-4-3-1)
	Description of the variety :	
	(a) Plant height	115 cm
	(b) Distinguishing morphological characters	It has profuse tillering, narrow and dark green leaves. The spikes are mid lax with white glumes. It has amber, hard and very bold grains.
	(c) Maturity (range in No. of days) seeding/ to flowering, seed to seed	Seeding to flowering = 113 days Seed to seed = 165 days
	Maturity group (early, medium and late whenever such classification exists)	Medium to late
	Average yield under normal conditions	3650 kg/ha
	Agency responsible for maintaining breeder seed	Punjab Agricultural University, Ludhiana

13	Crop	Wheat (*Triticum aestivum* L.)
	Variety	PBW 226
	Institution or agency responsible for developing the variety (with address)	Punjab Agricultural University, Ludhiana
	Parentage with details of its pedigree	WG 138/JustinJI.Chris/HD 1941
	Description of the variety :	
	(a) Plant height	The plant height varied from 90-101 cm at different trial conducting stations during 1987-88.
	(b) Distinguishing morphological features	PBW 226 is a double dwarf variety with an average plant height of about 92 cm. It has white, non-hairy glumes with fully developed awns. It has bold, hard, lustrous grains. It is highly resistant to pests.
	(c) Maturity range	130-135 seed to seed
	Average yield under normal conditions (yield in kgs/hectare)	PBW 226 gives an average yield of 4700 kg/hectare under late-sown high-fertility irrigated conditions.
	Agency responsible for maintaining breeder seed	Punjab Agriculture University, Ludhiana

14.	Crop	Wheat (*T. aestivum* L)
	Variety	HS 240
	Institution or agency responsible for developing the variety (with address)	I.A.R.I., Regional Station, Tutikandi, Shimla - 171 004 (H.P.)
	Parentage with details of its pedigree	Au × KAL - Bb/Wop "S" - PAVON "S" WBM 209-1-2-2-1
	Description of the variety :	
	(a) Plant height	107 cms
	(b) Distinguishing morphological characters	Long ear heads, Fully bearded, medium late with white glumes
	(c) Maturity (range in No. of days) seeding/ transplanting to flowering, seed to seed	(i) *Seeding to Flowering* HS 240 (Irrigated) 116-152 (Rainfed) 114-155 (ii) *Seed to seed* (Irrigated) 185-200 (Rainfed) 180-195
	Average yield under normal conditions (Yield in kgs/hectare)	Irrigated = 40-45 qtl./ha Rainfed = 25-28 qtl./ha
	Agency responsible for maintaining breeder seed	I.A.R.I., Regional Station, Tutikandi, Shimla - 4. (H.P.)

15.	Crop	Wheat (*T. aestivum* L)
	Variety	HS 207
	Institution or agency responsible for developing variety (with address)	I.A.R.I., Regional Station, Tutikandi, Shimla - 171 004 (H.P.)
	Parentage with details of its pedigree	(Kavkaz × Buho) × (Kal × Bb) WBM 9-1-3-1
	Description of the variety :	
	(a) Plant height	76-109 cms
	(b) Distinguishing morphological characters	Very good tillering, long ear heads fully bearded with brown glumes
	(c) Maturity (range in number of days) Seeding/ transplanting to flowering, seed to seed	Under late sown rainfed conditions
	Seeding to flowering	102-127 days
	Seed to seed	155-182 days
	Average yield under normal conditions (yield in kgs/hectare)	20-22 Q/ha. under late sown rainfed conditions
	Agency responsible for maintaining breeder seed	I.A.R.I., Regional Station, Tutikandi, Shimla - 4. (H.P.)

ANNEXURE III

Important features of the Varieties recommended for Notification in the 12th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. **Crop** : Barnyard millet/Sawan (*Echinochloa frmenmtacea*)

Name of the variety : Chandan

Parentage : Selection from genetic collections of Ballia District

Breeder/Institute responsible for maintaining breeder's stock : Professor and Head Department of Genetics and Plant Breeding, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur - 208 002.

Description of variety : Plants are erect with a height of 90-100 cm, strong from the base and thick in appearance; stem green. tightly covered with leaf sheath, flattened, glabrous hollow and nodes very conspicuous; leaves green long. apex acute, margin entire. both surface smooth tillers emerge simultaneously. normally 4-5 in number spike erect. elongated, panicles arrangement compact varying in number of 40-50 in each spike and at maturity panicles appear light gray in colour.

Describe at least Two identifiable and distinguishable morphological characterstics of the variety : Plants remain erect with thick and strong stem synchrony in tillering spike erect, elongated and panicles arrangement compact; panicles appear green before maturity. Plants mature in 65-75 days.

***Yield* (in kg/hectares) :**

(a) **Commercial Product** : Seed 1200-1600 kg/ha

(b) **Seed** : 1200-1600 kg/ha

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2. **Crop** : American Cotton (*Gossypium hirsutum* Linn)

Name of the variety : Vikas

(a) **Parentage with detail of its pedigree** : MCU 5 × C 1998

Breeder/Institute responsible for maintaining breeder's stock. : C.S. Azad University of Agriculture Technology, Kanpur - 208 002

Description of variety/hybrid : This new variety of American cotton is semi-sympodial in its habit of growth It matures earlier than Pramukh by about 15 days. The optimum planting of American cotton is last week of April in Uttar Pradesh. However, cotton sowings get delayed due to scarce availability of water and late harvest of wheat. By virtue of its earlier maturity, it can be planted up to mid of June and the entire crop finishes off by the mid of November and permits timely wheat cultivation. It is distinctly superior to pramukh. in *kapas* yield and ginning outturn. It gives 28 per cent higher *kapas* yield than Pramukh. on an average and its maturity is more uniform. It is also more tolerant to insect pests and diseases. In earliness, yield, fibre qualities and resistance, it is par with H777 and SH131. The mean fibre length of Vikas is 23.4 mm and ginning percentage is 34.

Describe at least two identifiable and distinguishable morphological characteristics of the variety. In case of hybrid, please describe also at least two identifiable and distinguishable morphological characteristics of both the parents : Plant are erect-growing, semi-sympodial but less vegetative (0-3 monopodia) and carries more fruiting branches (8-18) on the main stem. Its leaves are medium broad with 3-5 lobes and pollen and flower colours are creamy Its bolls have four to five loculi with average boll weight of about 3.2 gm. The boll opening is synchronous and maturity is about 145-155 days. Its seed index is 7-8 gm.

Yield (in kg/ha) : *kapas* yield 1200-1400 kg/ha

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3. **Crop** : *Finger millet* (*Eleusine corcana* [L.] *Gaertn*:)

Name of the variety : *KM*-13

Parentage with details of pedigree : Pureline selection from collections of Nepal

Breeder/Institute responsible for maintaining breeder's stock : Professor and Head, Department of Genetics and Plant Breeding, Chandra Shekar Azad University of Agriculture and Technology, Kanpur - 208002.

Description of variety : Plants are stout from the base itself erect and medium tall (75.85 cm) stem; flattened, strong, glabrous and covered with leaf sheath tillering almost synchronous and 4-8 in number; Average No. of fingers 7-9, each finger erect during blooming period and at maturity it appears slightly incurved forming a bunch shape.

Describe at least two identifiable and distinguishable morphological characteritics of the variety : Plant type erect, medium tall with strong stem, which is covered with leaf sheath, Each finger is erect in flowering period but it forms bunch shape by slightly incurred at maturity.

Maturity group	Mid - late group
Yield (in kgs/ha) :	
(a) Commercial product	2000 - 3000 kg/ha
(b) Seed	2000 - 3000 kg/ha

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4. Crop	Foxtail millet (*Setaria italica)*
Name of the variety	*Nischa* L
(a) Parentage with details	Selection from accessions of Basti District
Breeder/Institute responsible for maintaining Breeder's stock	Professor and Head, Department of Genetics and Plant Breeding, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur - 208 002.
Description of variety	Plant is erect with a height of 80-85 cm. medium tall stem green glabrous, round, hard and tightly covered with leaf sheath, and leaves dark green, broad in middle, apex acute and surface smooth. Number of tillers 2-3 and all emerge simultaneously. Ears are compact, elongated and awned initially they look dark green, but at maturity appear light amber colour.
Describe at least two identifiable and distinguishable morphological characterstics of variety	Plant type erect with hard stem, which is tightly covered with leaf sheath. Leaves are broader in middle and all 2-3 tillers emerge simultaneously. Ears are compact and awned. In beginning, they look dark green, but at maturity appear light amber colour.
Maturity group	Early maturing group
Yield (in kg/Hectares) :	
(a) Commercial product	1100-1500 kg/ha
(b) Seed	1100-1500 kg/ha

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5. Crop	Rice (*Oryza sativa* L)
Name of the variety	Bhuban (IET-7804)
Parentage with detail of its pedigree	OR 158 (IR8/Siam 29″ Parijat/Rasi
Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Bhubaneswar - 751 003
Description of variety :	
Plant Height	85 cm
Distinguishing Characters	apiculus and Stem not pigmented; hull on maturity is straw coloured
Maturity	135 days in *Kharif*
Reaction to major diseases :	
Blast	Moderately resistant
BLB	Resistant
Brown spot	Moderately resistant
Reaction to minor insect pests :	
Stemborer	Moderately Resistant
Gallmidge	Resistant
BPH	Resistant
Agronomic features	Lodging : Resistant Drought : Moderately resistant Field shattering : not much Response to fertility : High Seeding : Better under translating
Quality of the produce	100 grain weight : 23 g
Describe at least two identifiable and distinguishable morphological characteristics of the variety	Grows 85 cms tall, matures in 135 days and straw coloured hull
Maturity group	*Medium*
Yield (in kgs/Hect) :	
(a) Commercial product	Grain yield AV-4t/ha
Seed	Potential yield 9t/ha

6. Crop	Rice (*Oryza sativa* L.)
Name of the variety under which released or known	Ananga (IET-7433)
Parentage with detail of its pedigree	Kumar (T90/IR8)/CR57-49
Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Bhubaneswar - 751 003
Description of variety/hybrid :	
(a) Plant Height	75 cm
Panicles/Sq.m.	343 cm
Panicle length	21 cm
No. grains/panicle	80
1000 grain weight	22.2 g
Grain size	8 mm length 2.8 mm breadth 2.85 L/B ratio
(b) Grain classification	MS
(c) Maturity duration	120 days
(d) Reactions to disease :	
Blast	Moderately Resistant
BLB	Moderately Resistant
RTV	Moderately Resistant
(e) Reaction to insect pests :	
GM	Resistant
BPH	Resistant
(f) Agronomic features :	
Lodging	Resistant
Drought	Moderately Resistant
Response to high fertility	High
Suitable	Irrigated condition
(g) Quality of the produce	Medium slender grain with good cooking quality
Describe at least two identifiable and distinguishable morphological characteristics of the variety	Grains medium slender with L/B ratio of 2.85, gross 75 cm [illegible] and matures in 120 days (Kh).
Maturity group	Medium-Early
Yield : (in kgs)	
(a) Commercial product	Average grain yield : 5t/ha Potential yield : 8t/ha

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7. Crop	Rice (*Oryza sativa* L.)
Name of the variety	Srabani (IET-9946)
Parentage with detail	Mahsuri/IR 30
Breeder/Institute responsible for maintaining breeder's stock	Rice Research Station, Bhubaneswar - 751 003
Description of variety/hybrid :	
(a) plant height	105-110 cm
(b) Distinguished morphological characters	Golden hull and white pericarp with medium slender grains
(c) Maturity (Range in number of days) seeding/ Transplanting to Flowering seed to seed	Direct seeding 120-125 days Transplanting 125-130 days
(d) Maturity group (Early, medium and late wherever such classification exists)	Medium
(e) Reaction to major diseases under Field and controlled Conditions (Reaction to physiological strains/races/biotypes to be indicated wherever possible)	Blast : MR Sh. Blight : MR Sh. Rot : R Br. Spot : MR RTV : MR BLB : MS

(f) Reaction to major pests (under field and controlled conditions including store pests) :	GM	: MS
	SB	: R
	LF	: MR
(g) Agronomic Features (e.g. resistance to lodging, shattering, Fertilizer responsiveness, suitability for early or late sown conditions, seed rate etc.) :	Lodging	: MR
	Drought	: MS
	Field shattering	: R
	Fert, responsiveness	: Low
	Threshability	: Good
	Seed rate	: 50 kg/ha trans 60 kg/ha seeding
(h) Quality of produce of grain Forage/fibre including nutritive value, where relevant :	Grain	: MS
	Hulling	: 75%
	Milling	: 70%
	Endosperm - White	
Describe at least two identifiable and distinguishable morphological characteristics of the variety. :	Golden hull with white endosperm, medium slender grains, grows 105-110 cms tall.	
Maturity group :	Medium	
Yield (in kgs/ha) :		
(a) Commercial product :	Average grain yield 4 t/ha	
(b) Seed :		

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8. Crop :	Rice (*Oryza Sativa* L)	
Name of the variety :	Lalat (IET-9947)	
Parentage with detail of its pedigree :	Obs, 677/IR2071/Vikram/W 1263	
(a) Breeder/Institute responsible for maintaining breeder's stock. :	AICRIP. Centre, RRI, Chiplima, Sambalpur and Rice Research Station, Bhubaneswar.	
Description of variety :		
(a) Plant height :	85-90 cms	
(b) Distinguishing morphological characters :	Hull Straw coloured on ripening grains long slender Grain (L) 8.5 mm, Breadth (B) 2.5 mm, 1000 grain wt. 22 gms.	
(c) Maturity (range in number of days) seeding/transplanting to flowering seed to seed :	Transplanting 125-130 days	
(d) Maturity group (early, medium and late) wherever such classification exists :	Medium	
(e) Reaction to major diseases under field and controlled conditions (Reaction to physiological strains/races/biotypes to be indicated wherever possible). :	Blast	: MR
	Sheath blight	: MR
	Sheath Rot	R
	Brown spot	: MR
	RTV	: MR
	BLB	: MR
(f) Reaction to major pests under field and controlled conditions including store pests :	Stem borer	: MR
	Gall midge	: R
	BPH	: R
	GLH	: R
(g) Agronomic feature (e.g. resistance to lodging, shattering, fertilizer responsiveness, suitability for early or late sown conditions, seed rate etc.) :	Lodging	: R
	Drought	: Moderately tolerant
	Shattering	: Low
	Threshability	: Good
	Response to fertility	: High
	Seed rate	: 20 kgs./ha.
(h) Quality of produce grain forage/fibre including nutritive value where relevant :	Long slender grains with transluscent kernel Good cooking quality	
Describe at least two identifiable and distinguishable morphological characteristics of the variety :	Straw coloured hull, grows more than 85 cms. tall, grains long slender. L-8.5 mm., B-2.5 mm.	
Maturity group :	Medium	
Yield (in kgs./Hectare) :		
(a) Commercial product :	Average yield 4 t/ha.	
(b) Seed :	Potential yield 8 t/ha.	

9.	Crop	Rice (*Oryza sativa* L.)
	Name of the variety	Samalei (IET-3350) (CR.95-ORS-952-1)
	Parentage with details of its pedigree	Leuang 152 × IR 8 CR 95-ORs-952-1
	Breeder/Institute responsible for maintaining breeder's stock	Central Rice Research Institute, Cuttack-753 006 (Orissa)
	Description of variety	The variety is a selection from the cross of Leuang 152 × IR 8
	Height	Semi-tall (130 cms) with stiff-straw
	Maturity period	155 days maturity
	Foliage	Deep green and erect
	Grain	Long slender grain (LS) of golden brown colour with white kernel. 1000 grain weight : 21 gms.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	The variety is semi-tall in height with green erect leaves. It has long slender (LS) grains with golden brown husk and white kernel. Long panicle with synchronous flowering.
	Maturity group	*Late*
	Yield (in kg/ha)	4000-5000 kg/ha
	(a) Commercial Product	Grain 3-5 tonnes/ha
	(b) Seed	Do.

10.	Crop	Rice (*Oryza Sativa* L.)
	Name of the variety	*Heera* (CR 544-1-2 : IET 10973)
	Parentage with details of its pedigree	CR 404-48 × CR 289-1208 CR 544-1-2
	Breeder/Institute responsible for maintaining breeder's Stock	Central Rice Research Institute, Cuttack - 753 006 (Orissa)
	Description of variety :	
	Height	70-75 cms (semi-dwarf)
	Maturity period	65-68 days under direct seeding in kharif (takes a week longer to mature in Rabi).
	Grain type	Long bold (LB) with golden-brown husk and white kernel. Heavy grains having 28 gms as 1000 grain weight.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	The variety is semi-dwarf with green foliage, golden brown husk & white kernel.
	Maturity group	Extra - Early
	Yield (in kg/ha) :	
	(a) Commercial product	Grain (paddy) 2000 to 2500 kg/ha under dry seeding under rainfed condition in kharif. 3500 to 4500 kg/ha with germinated seeds and supplementary irrigation in rabi.
	(b) Seed	Do.

11.	Crop	Paddy/Rice (*Oryza sativa* L.)
	Name of the variety	Kalyani-II (IET-10970)
	Parentage with detail of its pedigree	Sattari/Rasi/Kalinga-III
	Breeder/Institute responsible for maintaining breeder's stock	Central Rice Research Institute, Cuttack - 753 006, Orissa
	Description of the variety	Under normal fertility conditions (40 : 20 : 20) and direct seeding measures 80-90 cm in height, matures in 60-62 days in *kharif* and in *Rabi* when sown in March, all parts green with long bold grains.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	Flowers in 35 to 37, Long Bold grains
	Maturity group	Very early
	Yield (in kg/ha)	2000 to 2500 kg/ha

12.	Crop	Rice (*Oryza sativa* L.)
	Name of the variety	Tara (CR 404-48 : IET-9215)
	(a) parentage with details of its pedigree	CR 94-1512-6 × Pusa 2-21
	Breeder/Institute responsible for maintaining breeder's stock	Dr. J.K. Roy, Breeder, Central Rice Research Institute, Cuttack - 753 006
	Description of the variety :	
	Height	Semi-dwarf (85-90 cms)
	Maturity period	100 days under direct seeding
	Grain type	Medium bold (MB) with white Kernel. Milling 72% with head rice recovery of 50% and good cooking quality.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	The variety is semi-dwarf (85-90 cms tall), erect with deep green leaves and medium bold (MB) grains with white kernel. It matures in 100 days. It differs from both the parents on duration and grain type.
	Maturity group	Early
	Yield (in kg/ha) :	
	(a) Commercial product	Grain (paddy) : 4000 to 5000 kg/ha.
	(b) Seed	Do.

13.	Crop	Paddy/Rice (*Oryza sativa* L.)
	Name of the variety under which released or known	Vanaprabha (IET 9804)
	Parentage with detail of its pedigree	ARC 12422 × ARC 12751 through hybridization. Its pedigree is CR. 289-1045-16.
	Breeder/Institute responsible for maintaining breeder's stock	Dr. D.P. Srivastava (Breeder), Central Rice Research Institute, Cuttack-753 006 (Orissa).
	Description of the variety :	
	(a) Plant height	115-120 cm
	(b) Distinguishing morphological characters	Semi-tall, all parts green with long slender grains and white kernel
	(c) Maturity range in number of days	90-95 days in kharif
	(d) Reaction to major disease under field condition	Resistant to blast and rice tungro virus
	(e) Agronomic features (e.g. resistance to lodging, frost and shattering, fertilizer responsiveness, suitability for early and late sown conditions, seed rate etc.	Non-lodging under rainfed uplands, non-shattering, fertilizer response upto 40 N, beyond which it may lodge at maturity, suitable for direct seeding.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	Semi-tall with 115-120 cm. All parts green with long slender grain and white kernel.
	Maturity group	Early with total duration of 90-95 days in kharif
	Yield (in kg/ha) :	
	(a) Commercial product	(Paddy) 3000 to 3500 kg/ha.
	(b) Seed	Do.

14.	Crop	Rice (*Oryza sativa* L.)
	Name of the variety	*Kshira* (CR 401-7 : IET 7328)
	Parentage with details	CR 94-1512-6 × Vijaya CR 401-7
	Breeder/Institute responsible for maintenance of breeder's stock	Dr. J.K. Roy (Breeder), Central Rice Research Institute, Cuttack-753 006 (Orissa).
	Description of the variety :	
	Height	85-90 cms (semi-dwarf) with erect green leaves
	Maturity period	130-135 days under transplanting condition
	Grain type	Medium bold (MB) straw coloured grain with white kernel, milling 72% with head rice recovery 55%.
	Describe at least two identifiable and distinguishable morphological characters of the variety	The variety is semi-dwarf with green foliage. It has straw coloured husk with medium bold grain and white kernel. It matures in about 135 days. Its grain size differs from both of its parents.

Maturity group	:	Medium
Yield (in kg/ha) :		
(a) Commercial product	:	Grain (paddy) 4000 to 6000 kg/ha
(b) Seed	:	Do.

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15. Crop	·	Rice/Paddy (*Oryza sativa* L.)
Name of the variety under which released or known	.	Padmini (IET 10561)
Parentage with detail of its pedigree	:	Mutant selection from the variety CR. 1014 by gamma irradiation followed by selection. Its pedigree is CRM. 25.
Breeder/Institute responsible for maintaining breeder's stock	:	Mr. P.N. Sreedharan (Breeder), Central Rice Research Institute, Cuttack - 6, (Orissa).
Description of the variety :		
(a) Plant height	:	120 cms
(b) Distinguishable morphological characters	:	Plant parts green, superfine grains, long panicles
(c) Maturity (range in number of days)	:	140 days from seed to seed (Photosensitive flowering by middle of October)
(d) Reaction to major diseases under field conditions	:	Highly tolerant to bacterial leaf blight.
(e) Agronomic features (e.g. resistance to lodging, frost & shattering, fertilizer responsiveness, suitability for early or late sown condition, seed rate etc.)	:	Moderately tolerant to lodging resistant to shattering, requires only a small dose of 30 kg N for producing an average yield of 4 t/ha, highly suitable for late planting up to 1st week of Sept. as a post-jute crop, being superfine grain variety, the seed rate is 45 kg/ha.
(f) Quantity of produce	:	Yield 4.00 t/ha with a low N application of 30 kg N.
Describe at least two identifiable and distinguishable morphological characteristics of the variety	:	All plant parts green, superfine grain with long panicles and semi-tall habit of 120 cm.
Maturity group	:	Medium with total duration of 140 days in kharif
Yield :		
(a) Commercial product		Grain (paddy) 3.00 - 4.00 tonnes/ha
(b) Seed	:	Paddy

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16. Crop	:	Rice (*Oryza sativa* L.)
Name of the variety under which released or known	:	*CR* 1014
Parentage with detail of its pedigree	:	Cross T 90 × Urang Urangan
Breeder/Institute responsible for maintaining breeder's stock	:	M.J. Balakrishna Rao (Breeder), Central Rice Research Institute, Cuttack - 753 006 (Orissa).
Description of variety	:	Tall growing, stiff strawed with medium slender grain
(a) Plant height	:	150-160 cm
1000 grain weight	:	16.2 gm
grain size : Length	:	5.61 mm
Breadth	:	1.76 mm
L/B ratio	:	3.18 mm
(b) Grain classification	:	Medium slender grain (MS)
(c) Maturity duration	:	145-160 days, strongly sensitive, flowers on 7th November
(d) Reaction to diseases : Blast, BLB, RTV (e) Reaction to insect pest : GM, BPH	}	There is no incidence of pests & diseases, after extensively growing for two decades.
(f) Agronomic features : Lodging	:	Moderate
Drought	:	—
Response to high fertility	:	Nil
Suitability	:	In all lowland areas

(g). Quality of produce	:	Excellent milling, cooking qualities. The straw quality is good with easy threshability.
(1) Kernel colour	:	White
(2) Hulling	:	78.5%
(3) Milling	:	73.0%
(4) Alkali value	:	4.0, 3.0
(5) Water uptake		225
(6) Head rice recovery		69.0%
(7) Volume expression	:	3.5
(8) Kernel length after cooking	:	—
(9) Elongation	:	1.57
(10) Abdominal white	:	Absent
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	Medium slender grain, tall growing, stiff strawed
Maturity group	·	Late, photosensitive, flowers around 7th November
Yield :	:	3 to 4 tonnes/ha
(a) Commercial product	:	Straw is good and grain is medium slender
(b) Seed	:	Excellent cooking quality and milling quality

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17. Crop	:	Paddy/Rice (*Oryza sativa* L.)
Name of the variety under which released or known	:	*MOTI*
Parentage with detail of its pedigree	:	CR. 260 CR. 151-79/CR. 1014 Breeding line known as CR. 260-136-321 DRR Trail No. IET. 9170
Breeder/Institute responsible for maintaining breeder's stock	:	Dr. C. Gangadharan, Central Rice Research Institute, Cuttack - 6, Orissa
Description of the variety	:	A medium statured (115-120 cm), non-lodging variety maturing in 145 days when transplanted. Yielding 4 to 4.5 tonnes/ha under low nitrogen inputs, high head rice recovery (70%), paddy, straw coloured, long slender white kernel and excellent cooking quality.
Describe at least two identifiable and distinguishable morphological characteristics of the variety	:	Medium statured, non-lodging, maturity period 145 days, long slender grains.
Maturity group	:	Medium
Yield (in kg/ha)	:	4000 to 4500 kg/ha

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18. Crop	:	Rice (*Oryza sativa* L.)
Name of the variety	:	Gayatri (IET-8022)
Parentage with details of its pedigree	:	A line derived from the cross Pankaj × Jagannath
Breeder/Institute responsible for maintaining breeder's stock	:	M.J. Balakrishna Rao and M. Nagaraju (Breeder), Central Rice Research Institute, Cuttack - 753 006 (Orissa).
Description of variety :	:	Semi-tall, grows to the height of 100 cms with short bold grains
(a) Plant height	:	95-100 cms
1000 grain weight	:	25 gms
Grain size Length	:	5.28 mm
Breadth	:	2.64 mm
L/B ratio	:	2.00 mm
(b) Grain classification	:	Short bold
(c) Maturity duration	:	145-160 days (depending upon transplanting time)
(d) Flowering period	:	It flowers during the last week of October
(e) Reaction to disease	:	Blast : Moderately resistant B.L.B. : Resistant
(f) Reaction to insect pests	:	G.M. : Moderately resistant
(g) Agronomic features	:	Lodging : Non-lodging till maturity with stiff straw Drought : Lowland variety

(h) Quality of produce	Short bold grain with good cooking quality. The milling returns are high with head rice recovery of 69%. The grain and straw are good. The average grain yield range from 4.0 - 4.5 t/ha.
(1) Kernel colour	White
(2) Hulling	79.5%
(3) Milling	75%
(4) Head rice recovery	69%
(5) Alkali value	4.0
(6) Water uptake	175
(7) Volume expression	3.7
(8) Kernel length	8.60
(9) Elongation ratio	1.63
(10) Amylose content	16.4
(11) Protein	8.15
Describe at least two identifiable and distinguishable morphological Characteristics of the variety	Semi-tall with short bold grain
Maturity group	Late, photosensitive variety flowers around 26th October
Yield	4.0 to 6.0 tonnes/ha

19. Crop	Rice/Paddy (*Oryza sativa* L.)
Name of the variety	(IET-8548)
Parentage with detail of its pedigree	CR. 260 CR. 151-79/CR. 1014 pedigree line known as CR 260-171 DRR Trial No. IET. 8548
Breeder/Institute responsible for maintaining breeder's stock	Dr. C. Gangadharan, Central Rice Research Institute, Cuttack - 6, Orissa.
Description of the variety	A medium-statured, non-lodging variety, maturing in 170 days when sown/transplanted in the last week of June/July, with tolerance to cycles of submergence during July-August. Yields 3.5 - 4.0 t/ha under low inputs, high head rice recovery, medium slender grain, excellent cooking quality.
Describe at least two identifiable and distinguishable morphological characteristics of the variety	Medium statured, absolutely non-lodging with long, erect flag leaf and long panicles. Differs from the parents in duration, habit and grain size.
Maturity group	Late
Yield in (kg/ha)	3500 - 4000 kg/ha.

20. Crop	Rice/Paddy (*Oryza sativa* L.)
Name of the variety	(IET-10222)
Parentage with detail of its pedigree	CR. 260 CR. 151-79/CR. 1014 Breeding line known as CR. 260-30 DRR Trial No. IET. 10222.
Breeder/Institute responsible for maintaining breeder's stock	Dr. C. Gangadharan, Central Rice Research Institute, Cuttack - 6 (Orissa).
Descriptions of the variety	A tall, non-lodging variety maturing in 180 days when sown/transplanted in the last week of June/July, non-pigmented in all plant parts, yields 3.5 - 4.0 t/ha under low fertiliser inputs, with submersion and pest tolerance and good grain and cooking quality.
Describe at least two identifiable and distinguishable morphological characteristics of the variety	Tall, non-lodging, with a maturity period of 180 days with medium slender grains.
Maturity group	Late
Yield in (kg/ha)	3500 - 4000 kg/ha

21. Crop	Sesamum (*Sesamum indicum* L.)
Name of the variety	Vinayak (Selection 14)
Parentage with detail of its pedigree	A pureline selection from Mathasahi Local material of Orissa
Breeder/Institute responsible for maintaining Breeder's stock	Oilseeds Research Station, Orissa University of Agriculture and Technology, Bhubaneshwar.

Description of the variety :

(a) Plant height	:	Kharif : 105 cms Rabi : 70 cms
(b) Distinguishing morphological characters	:	(i) Semi spreading with moderately branched and glabrous capsules (ii) Brown colour of medium sized seeds
(c) Maturity	:	85-90 days in kharif 80-85 days in Rabi/Summer (February sowing)
(d) Branching habit	:	Semi Spreading
(e) Average nos. of branch/Plant	:	3.4
(f) Leaf	:	Lanceolate
(g) No. of Capsules per Axil	:	1
(h) Capsule	:	Glabrous
(i) Capsule Size	:	24.0 × 8.2 × 6.6 mm
(j) No. of locules/Capsule	:	4
(k) No. of seeds/Capsule	:	71
(l) Seed Coat colour	:	Brown
(m) 1000 Seeds weight	:	2.78 gms
(n) Oil Content	:	48.5%
Describe at least two identifiable and distinguishable morphological characteristics of the variety	:	(i) Semi spreading with moderately branched and glabrous capsules, (ii) Brown colour of medium sized seeds
Yield (in kgs/ha)		
(a) Commercial product	:	500 kgs/ha.
(b) Seed	:	400 kgs/ha.

ANNEXURE IV

Morphological Characters of Maize Hybrid Lines

Characters/Lines	CM 300	CM 400	CM 600	CM 601
Leaf width	Medium	Medium wider than CM 300	Medium	Medium
Leaf colour	Dark Green	Light green lighter than CM 300	Green	Green
Leaf Texture	Smooth	Slightly wrinkled	Smooth	Smooth
Tassel shape	Semi-compact and drooping at upper half	Medium	Loose	Semi-compact to loose
Tassel Size	Medium	Open with few secondary branches	Medium to large	Large
Glume colour	Purple	Green with purple tinge	Green	Green with purple tinge
Anther colour	Purple	Yellow	Yellow to purple	Green
Silk colour	Predominantly purple	Predominantly Green	Predominantly Green	Purple/Green
Husk colour	Purple	Green	Predominantly green	Green
Ear shape	Cylindrical	Cylindrical	Conical long ear	Cylindrical
Cob colour	Predominantly white	White	White	White
Grain texture	Flint	Dent	Flint	Dent to semident
Grain colour	Pearly white	Dull white	White	Dull white
Cap	Absent	—	—	—
Special characters	(1) Semi-compact tassel, drooping at upper half (2) Pearly white flint grain	Wrinkled leaf predominantly green silk open tassel Chalky white dent grain	(1) Plant shorter than 601 (2) Conical long ear (3) Pearly white flint grains	(1) Sturdy tall plants with dense tassel (2) Cylindrical ears (3) Dent to semident grains

Characters/Lines	CM 104	CM 105	CM 201
Leaf width	Medium	Broad	Variable
Leaf colour	Green	Dark green	Green
Leaf texture	Smooth	Smooth	Smooth
Tassel size	Medium	Medium	Long branches
Glume colour	Green with purple tinge	Green	Purple
Anther colour	Purple	Yellow	Predominantly purple
Tassel shape	Semi compact	Semi compact to loose	Medium loose
Silk colour	Green	Green few turning purple on exposure to sun	Predominantly purple
Husk colour	Green	Green	Green
Ear shape	Cylindrical	Cylindrical	Cylindrical
Cob colour	White	White	Red
Grain texture	Flint	Flint	Dent
Grain colour	Light orange	Orange yellow	Yellow

Characters/Lines	CM 104	CM 105	CM 201
Special characters	(1) Purple anther, Semi-compact tassel (2) Green silk	(1) Green glumes (2) Yellow anthers	(1) Vigorous plant (2) Red cob colour

Characters/Lines	CM 115	CM 114	CM 206
Leaf width	Narrow	Broad	Medium
Leaf colour	Green	Green	Green
Leaf texture	Leathery	Smooth	Smooth
Tassel shape	Predominantly drooping	Medium to loose	Semi-compact
Tassel size	Medium	Medium to large	Short
Glume colour	Green with purple tinge	Predominantly green	Green with purple tinge
Anther colour	Light purple	Predominantly light purple	Yellow
Silk colour	Purple	Predominantly green	Green
Husk colour	Green	Green	Green
Ear shape	Cylindrical	Cylindrical	Cylindrical
Cob colour	White	White	Red
Grain texture	Flint	Flint	Dent
Grain colour	Orange	Orange/yellow	Yellow
Special characters	Short plant type Predominantly drooping tassel	Vigorous plant smooth seed at the tip of the cob	Stiff stalk short plant type yellow anthers, irregular kernel placement

Characters/Lines	CM 120	CM 118	CM 119	CM 208
Leaf width	Narrow	Medium	Narrow	Medium
Leaf colour	Green	Green	Green	Green
Leaf texture	Smooth	Smooth	Smooth	Smooth
Tassel shape	Loose	Compact to Semi-compact	Predominantly compact to semi-compact	Semi-compact to loose
Tassel size	Medium	Small	Medium	Few tassel branches
Glume colour	Purple	Green with purple tinge	Green with purple tinge	Green with purple tinge
Anther colour	Purple	Yellow	Yellow	Yellow
Silk colour	Predominantly Purple	Purple and green	Predominantly green	Predominantly green
Husk colour	Green	Green	Green	Green
Ear shape	Cylindrical	Cylindrical	Cylindrical	Cylindrical
Cob colour	White	White	Red	Red
Grain texture	Flint	Flint	Flint	Dent
Grain colour	Orange yellow	Orange yellow	Orange yellow	Yellow
Special characters	(1) Stalk base purple (2) Medium plant (3) Purple anthers	(1) Short plant (2) Compact to semi-compact tassel	(1) Lean plant type (2) Bold shiny orange flint grain	(1) Upper leaves erect (2) Tassel semi-compact to loose (3) Cob colour red (4) Irregular kernal rows

Characters/Lines	CM 116	CM 117	CM 207
Leaf width	Medium	Broad	Medium
Leaf Colour	Dark Green	Dark Green	Dark Green
Leaf texture	Smooth	Smooth	Smooth
Tassel shape	Loose	Semi-compact	Semi-compact to loose
Tassel size	Large to Medium	Medium to large	Medium
Glume colour	Green	Green/Purple tinge	Green with purple tinge

Characters/Lines	CM 116	CM 117	CM 207
Anther colour	Green	Green/Purple	Green
Silk colour	Predominantly Green	Green	Green to light purple
Husk colour	Green	Green	Green
Ear shape	Cylindrical	Conical to cylindrical	Conical to cylindrical
Cob colour	White	White	White
Grain texture	Flint	Flint	Semi-dent
Grain colour	Yellow	Orange	Yellow
Special characters	(1) Tassel medium open (2) Yellow to light orange flint (3) Medium dark green leaves	(1) Semi compact tassel (2) Orange flint grain (3) Broad leaf	(1) Yellow semi-dent grain (2) Hairiness on leaf blade

Characters/Lines	CM 112	CM 113	CM 205
Leaf width	Medium to Broad	Medium erect	Medium
Leaf colour	Dark green	Dark green	Light green
Leaf texture	Smooth	Wrinkled	Smooth
Tassel shape	Semi compact to loose	Predominantly open	Sparse
Tassel size	Medium to large	Medium to large	—
Glume colour	Green with purple tinge	Green with purple tinge	Green with purple tinge
Anther colour	Green/Purple	Green	Purple
Silk colour	Light purple	Predominantly purple	Green
Husk colour	Green	Green	—
Ear shape	Cylindrical	—	—
Cob colour	White	White	White
Grain texture	Flint	Flint	Dent
Grain colour	Yellow	Yellow	Orange yellow
Special characters	(1) Dense tassel (2) Medium drooping leaves	(1) Medium, erect wrinkled leaves (2) Yellow flint grain	(1) Light green leaves (2) Anthers purple (3) Orange/yellow flat grains

Characters/Lines	CM 301	CM 302	CM 303	CM 401
Leaf width	Medium	Broad	Medium	Medium
Leaf colour	Green	Dark green	Dark green	Dark green
Leaf texture	—	—	—	—
Tassel shape	Drooping	Erect secondary branches	Erect with few secondary branches	Erect with few secondary branches
Tassel size	Medium	Medium	Medium	Medium
Glume colour	Green, tip purple	Purple	Green	Green, purple at base
Anther colour	Pink	Purple	Yellow	Yellow
Silk colour	Light chocolate	Purple	Pale green	Pale green
Husk colour	Green	Green	Green	Green
Ear shape	Small cylindrical	Medium conical	Medium conical	Cylindrical small
Cob colour	White	White	White	White
Grain texture	Flint	Flint	Flint	Semi-dent
Grain colour	White	White	White	White
Special characters	(1) Medium leaf with green to Purple brace roots (2) Tassel shape drooping (3) Light chocolate silk colour	(1) Broad leaves (2) Purple glume colour (3) Ear shape conical	(1) Stalk green (2) Glume colour green (3) Anther colour yellow (4) Silk colour pale yellow	(1) Semi flint grain (2) Base of glume purple (3) Ear size small with bold grain

Characters/Single cross	CM 200 × CM 111	CM 400 × CM 300
Leaf width	Broad	Broad and Medium
Leaf colour	Green	Dark green
Leaf texture	Variable	Leathery and normal
Tassel shape	Open, Dense	—
Tassel size	Large	Medium
Glume colour	Green with light purple tinge	Predominantly purple
Anther colour	Purple and Green	Predominantly purple
Silk colour	Predominantly green	Green and purple
Husk colour	Green	Green and purple
Ear shape	Cylindrical	Cylindrical
Cob colour	Light purple	White and purple
Grain texture	Semi-dent	Semi-dent
Grain colour	Yellow	White
Special characters	(1) Tall sturdy (2) Brace root Purple (3) Kernel rows straight	(1) Tall sturdy (2) Cob colour predominantly white (3) Kernel rows straight

Morphological Characters of Maize Inbred Lines

Pedigree

1. PLANT HEIGHT

Tall	Medium	Dwarf	Lanky	Sturdy

WIDTH			ORIENTATION	
Broad	Medium	Narrow	Erect	Drooping

COLOUR			
Dark green	Green	Light green	Yellow green

2. LEAF TEXTURE

Leaf Texture		
Leathery	Normal	Smooth (oily)

Pubescence		Leaf Sheath			
Present	Absent	Purple	Light purple	Dilute red	Green

3. STEM

Culm colour (Exposed only)			Brace Root		
Purple	Light purple	Green	Purple	Red	Green

4. TASSEL

Dense	Medium	Lax

Secondary branches	
Erect	Drooping

Number of secondary branches			Glume colour			
Large	Medium	Few	Purple	Light purple	Pink	Green

Glume base colour	
Colour Present	Absent

Anther colour in morning of emergence		
Purple	Pink	Green

Dry Anther Colour		
Purple	Pink	Green

5. SILK

Colour at emergence			
Red	Pink	Green	Brown

6. HUSK COVER

Tight	Medium	Loose	Covered upto tip	Tip exposed

7. COLOUR OF HUSK COVER

Purple	Light purple	Green

8. EAR

Ears after harvest

Shape		Size		
Conical	Cylindrical	Long	Medium	Short

Cob (Heart) Colour			Rigidity of Cob	
Purple	Pink	White	Hard	Flexible

Grain filling in cob		Kernel rows	
Filled upto tip	Tip not filled	Straight	Irregular

Extent of ovule fertility

(in percentage)

9. GRAIN

Grain Colour						
Yellow	Lemon	Yellow	Orange	Pearly	White	Chalky white

Grain Texture			White caps	
Dent	Semident	Flint	Present	Absent

Grain shape			Grain Size		
Beaked	Round	Flat	Small	Medium	Bold

ANNEXURE V

1. Crop	:	Paddy (*Oryza sativa* L.)
Name of the variety	:	**ADT 37**
Parentage with details of its pedigree	:	BG 280-1-2/PTB 33
Breeder/Institute responsible for maintaining breeder's stock	:	Tamil Nadu Rice Research Institute, Aduthurai.
Description of variety :		
Plant height	:	95 cm
Leaf sheath	:	Green
Junction, auricle, ligule, septum	:	White
Leaf blade	:	Dark green
Flag leaf	:	Erect
Fertile glumes	:	Green on flowering, straw on maturity Slight brown spots on grains
Aplicules	:	Green
Awns	:	Absent
Panicle	:	Compact and high panicle weight
Exertion	:	Well exerted
Grain charachers (L × B × T mm)	:	7.0 × 3.1 × 1.8
Rice grade	:	Short bold
Rice colour	:	White
Abdominal white	:	Present
Translucency	:	Translucent
L/B ratio	:	1.79
Hulling %	:	80.4
Milling %	:	70.5
1000 grain weight	:	23.4 grams
Days to 50% flowering	:	75
Days to maturity	:	105
Describe at least two identifiable and distinguishable morphological characteristics of the variety	:	(i) Short bold grain with light brown spot. (ii) Dark green leaves with white function, ligule and septum.
Maturity group	:	Early
Diseases and pest resistance	:	Resistant to leaf yellowing brown spot blast **BPH & GLH** **Moderately** resistant to BLB RTV gall Midge and Leaf folder.
Yield (in kg/ha) :		
(i) Commercial product	:	63 kg grain
(ii) Seed	:	80% of grain yield

2. Crop	:	Paddy (*Oryza sativa L.*)
Name of the variety	:	ADT 38
Parentage with details of its pedigree	:	IR 1529-680-3-2/IR 4432-52-6-4- IR 7963-30-2
Breeder/Institute responsible for maintaining breeder's stock	:	Tamil Nadu Rice Research Institute, Aduthurai.

Description of the variety :

Plant height : 80-85 cm

Anthocyanin pigment : Absent

Leaf sheath : Green

Pulvinus : Green

Leaf axil : Green

Leaf blade : Dark green normal

Ligule : White

Auricle : White non prominent

Septum : White

Flag leaf : Acute erect

Panicle : Long moderately dense

Exertion : Full

Fertile glume : Green

Awns : Absent

Grain characters (L × B × T mm) : 8.9 × 2.4 × 2.00

L/B ratio : 3.2

1000 grain weight : 21 grams

Kernel characters:

L × B × T (mm) : 6.9 × 2.4 × 2.0

L/B ratio : 2.9

Brown rice : Medium slender

Rice grade : Fine

Rice colour : White

Abdominal white : Absent

Translucency : Translucent

Weight of one litre of paddy : 550 gm

Hulling % : 78.2

Milling % : 68.0

Days to 50% flowering : 100-105 days

Days to maturity : 130-135 days

Describe atleast two identifiable and distinguishable morphological characteristics of the variety :

(i) Long moderately dense panicle with slender grain.

(ii) Fertile glume, green at flowering and golden yellow at maturity.

(iii) Erect flag leaf & synchronized flowering.

Maturity group : Medium

Disease and pest resistance : Resistant to blast brown spot, green leaf hopper, WPPH. Moderately resistant to RTV, BPH, leaf folder and gall midge.

Yield (kgs/ha) :

(i) Commercial product : 5800 kg

(ii) Seed : 80% of grain yield

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3. Crop : Paddy (*Oryza sativa L.*)

Name of the variety : ADT 39

Parentage with details of its pedigree : IR 8 × IR 20

Breeder/Institute responsible for maintaining breeder's stock : Tamil Nadu Rice Research Institute, Aduthurai.

Description of the variety :

Plant height : About 76 cm
Anthocyanin pigment : Absent
Leaf sheath : Green
Pulvinus : Green
Leaf axil : Green
Leaf blade : Dark Green
Ligule : Papery white
Auricle : Non Pigmented
Septum : Light cream
Flag leaf : Acute, erect
Exertion : Full
Panicle : Green at flowering and light dirty furrows on ripening.
Apicules : Green
Awns : Absent
Grains (L × B × T) : 7.6 × 2.3 × 1.9 mm
1000 grain weight : 18 grams
Weight of the one litre of paddy : 600 grams
Hulling : 78%
Milling : 65%
Kernels (L × B × T) : 6.1 × 2.0 × 1.6
L/B ratio (Kernels) : 3·0
Brown rice : Medium slender
Rice grade : Fine
Rice colour : White
Abdominal white : Absent
Translucency : Translucent
Days to 50% flowering : 90-95 days
Days to maturity : 120-125 days
Describe atleast two identifiable and distinguishable morphological characteristics of the variety : (i) Glumes green at flowering and light furrows at ripening.
(ii) Abdominal white absent in grain.
Maturity group : Medium
Disease and pest resistance : Resistant to blast, bacterial blight, sheath rot

Yield (in kgs/ha) :
(i) Commercial product : 5612 Kg.
(ii) Seed : 80% of grain yield

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4. Crop : Paddy (*Oryza sativa L.*)
Name of the variety : TPS 2
Parentage with details of its pedigree : IR 26/Co 40
Breeder/Institute responsible for maintaining breeder's stock : Rice Research Station, Tirupathisaram.

Description of the variety :

(i) Plant height (cm) : 90-95
(ii) Distinguishing morphological features :
Habit : Semi-dwarf
Leaf sheath : Green

Axil	:	Light Green
Junction	:	White
Auricle	:	White
Ligule	:	White
Septum	:	Cream
Flag leaf	:	Erect
Lemma and palea	:	Green at emergence
Apicules	:	Green
Awn	:	Nil
Panicle	:	Medium
Husk colour	:	Straw
Length of grain (mm)	:	8.10
Breadth of grain (mm)	:	2.80
Grain L/B ratio	:	2.89
1000 grain weight (g)	:	23.5
Length of rice (mm)	:	5.56
Breadth of rice (mm)	:	2.38
Rice L/B ratio	:	2.34
Rice Grade	:	Short bold
Rice colour	:	White
Abdominal white	:	Present
(iii) Days to 50% flowering	:	95 to 100 days
Days to maturity	:	125 to 130 days
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	Apicules green in colour panicle medium compact
Maturity group	:	Medium
Disease and pest resistance	:	Moderately resistant to Brown Plant Hopper, Leaf Folder and Rice white tip Nematode.
Yield (in kgs/ha) :		
(i) Commercial product	:	4615
(ii) Seed	:	3000

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5. Crop	:	Paddy (*Oryza sativa L.*)
Name of the variety	:	MDU 2
Parentage with details of its pedigree	:	CO 25/IR 8
Breeder/Institute responsible for maintaining breeder's stock	:	Department of Agricultural Botany, AC & RI, Madurai.
Description of variety :		
Strain	:	MDU 2
Parentage	:	Co 25 × IR 8
Duration	:	130 - 135 days
Season	:	Rabi/II Crop season (October-March) in Cumbum Valley of Madurai Distt.
Area of adaptation	:	Cumbum Valley and other cooler climatic areas upto 500m elevation having cooler climate of 14-16°C during January, February months, synchronizing with flowering phase of the crop.
Yield/ha	:	4700 kg/ha
Habit	:	Erect
Leaf sheath	:	Pale Green
Axil	:	Green
Juncture	:	White
Auricle	:	White

Ligule : White
Septum : Cream
Leaf blade : Dark green
Flag leaf : Dark green
Fertile glume : Green
Apicules : GT
Awn : Absent
Panicle : Long compact
Exertion : Exerted
Paddy (L × B × T) : 7.98 × 3.82 × 3.43
1000 grain weight : 19.5 g
Brown rice (L × B × T) : 5.58 × 2.68 × 2.39
Rice grade : Medium fine
Rice colour : White
Abdominal white : White
Translucent : Translucent
Milling percentage : Markedly high ie 60%
Describe at least two identifiable and distinguishable morphological characteristics of the variety : Dark green leaves pale green internode and sheath Low spikelet sterility under cool weather.
Maturity group : Medium
Disease and pest resistance : Field tolerant to gall midge, leaf folder, stemborer, leaf blight and leaf spot.

Yield (in kgs/ha) :
(i) Commercial product : 6000 kgs/ha
(ii) Seed : 4800 kgs/ha

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6. Crop : Rice (*Oryza sativa L.*)
Name of the variety : Improved white ponni
Parentage with details of its pedigree : Selection from white ponni
Breeder/Institute responsible for maintaining breeder's stock : Tamil Nadu Rice Research Institute, Aduthurai.

Description of variety :
(i) Plant height : 130-135 cm
(ii) Distinguishing morphological features :
Plant height (cm) : 130-135 (tall)
Anthocyanin pigment : Absent
Leaf Sheath : Green
Pulvinus : Green
Leaf axil : Colourless
Juncture : Colourless
Ligule : White
Panicle : Long drooping
Auricle : Colourless
Lemma and palea : Straw
Husk colour : Straw
Apicules : Green
Rice colour : Straw
Abdominal white : Absent
Length of grain (mm) : 8

Breadth of grain (mm) : 3
L/S ratio : 2.66
Thickness of grain : 2.0 mm
1000 grain weight : 16.4 grams
Protein content % : 9.58
(iii) Days to 50% flowering : 105 - 110 days
Days to maturity : 135 - 140 days (Seed-Seed)
Describe at least two identifiable and distinguishable morphological characteristics of the variety : Long droopy panicle fine grain
Maturity group : Medium
Disease and pest resistance : Possesses field resistance to RTV and yellowing syndrome and moderately resistant to Brown spots and Blast.

Yield (in kgs/ha) :
(i) Commercial product : 4500 kg. Grain/7400 kg. straw
(ii) Seed : 1800 - 2000

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7. Crop : Paddy *Oryvzo satva L.)*
Name of the variety : Chaitanya (IET-9265)
Parentage with detail of its pedigree : Sowbhagya/ARC-5984
Breeder/Institute responsible for maintaining breeder's stock : Rice Breeder, Agricultural Research Station.
Andhra Pradesh Agricultural University. Maruteru - 534 122
Description of Variety : Chaitanya variety is a semi-dwarf type with all plant parts green in colour Its glumes are straw in colour. Rice is classified as medium and slender. It is tolerant of brown planthopper. Its maturity duration is 150 days.
Describe at least two identifiable and distinguishable morphological characteristics of the variety : (a) Grain is straw in colour and classified as fine.
(b) All parts of the plant are green in colour.
Maturity group : Late (150 days)

Yield :
Grain yield : 7000 kg/ha

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8. Crop : Paddy/Rice (*Oryza sativa L*)
Name of the variety : Pinakini (NLR 9672-96)
Parentage with detail of its pedigree : This culture was mainly selected for non-shattering habits, coupled with high yield potential blast resistance, with molagolukuls grain type.
Breeder/Institute responsible for maintaining breeder stock : Rice Breeder, Agricultural Research Station, Nellore - 4.
Description of variety : Semi-dwarf, compact with drooping, flag leaf, stiff and non-lodging, non-shattering habit, medium grain type with dirty brown colour in grain. Rice kernel is medium and translucent. Resistant to blast, moderately resistant to brown spot and bacterial blight.
Plant height : 120-130 cm
Description of the parents : Does not arise as it is not a hybrid
Describe atleast two identifiable and distinguishable morphological characteristics of the variety : (i) Medium long and droopy flag leaf.
(ii) Broad and light green foliage.
Maturity group : Late 160-170 days

Yield :
(a) Commercial product straw : 3.0 t/ha
(b) Seed/Grain : 6.0 t/ha

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9. Crop : Rice (*Oryza sativa L.*)
Name of the variety : (BPT 5204) - Samba Mahsuri
Parentage with detail of its pedigree : (GEB 24 × T(N) -1) + Mahsuri

Breeder/Institute responsible for maintaining breeder's stock : A.P. Agricultural University, Rice Research Unit, Agricultural **College**, Bapatla.

Description of variety :

(a) Plant Height : Dwarf to medium tall

(b) Distinguishing morphological characters : *Habit :* Erect, non-lodging, open type of canopy.
Foliage : Dark green erect short leaves late senescence boot leaf erect.
fluorescence : Erect or slightly drooping exsertion complete.
Glume colour at maturity : Straw colour *kernel colour;* white translucent
Grain classification : Fine (Medium slender).

Two identifiable and distinguishable morphological characteristics of the variety : Dwarf to medium tall, erect, non-lodging open type of canopy with dark green erect short leaves. The influorescence erect slightly drooping with complete exsertion.

Maturity group : Late duration (Seed to Seed) (140-150) days

Yield (in kgs/Hects) :

(a) Commercial product : 5·5 to 6.5 tonnes/ha

(b) Seed : 4.5 to 5.0 tonnes/ha

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10. Crop : Paddy/Rice (*Oryza sativa L.*)

Name of the variety : Tikkana (NLR 27999)

Parentage with detail of its pedigree : RP 31-49-2/BCP 1
NLR 27999 is a cross derivative of RP 31-49-2 (blast resistant) and BCP 1 (molagolukulu grain) was selected for high yield with molagolukulu grain type couple with resistance to blast.

Breeder/Institute responsible for maintaining breeder's stock : Rice Breeder, Agricultural Research Station, Nellore - 4

Description of variety : Semi-dwarf, stiff culms, non-lodging, erect leaf canopy, erect flag leaf, grain is medium with dirty brown in furrows, medium and translucent kernel, resistant to blast moderately resistant to bacterial blight and brown spot.

(a) Plant height : 120-130 cm

(b) Distinguished morphological characters : —

Describe atleast two identifiable and distinguishable morphological characteristics of the variety : (1) Medium long and erect flag leaf.
(2) Erect leaf canopy with light green colour.

Maturity group : Late (165-175 days)

Yield :

(a) Commercial product : 3000 kgs/ha

(b) Seed/Grain : 6000 to 6500 kg/ha

सत्यमेव जयते

Minutes of the Thirteenth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 9th June, 1989 under the Chairmanship of Dr. R.S. Paroda, DDG (CS), ICAR

The list of the participants is at Annexure I.

2. The Chairman welcomed the participants and informed that this is the second Meeting after reconstitution of the Central Sub Committee on Crop Standards, Notification and Release of Varieties and so far no backlog is pending as far as Release and Notification of the Varieties are concerned. He further stated that he has advised all the Project Directors/Coordinators to submit the proposals preferably within three months after indentification of the varieties in Crop Workshops. The Chairman invited the Agriculture Commissioner, Govt. of India and requested him to give his views.

3. Dr. T. V. Sampath, Agriculture Commissioner, Govt. of India stated that our main objective is to increase the food production in the country. The importance of the new and demonstrably superior varieties in optimising the yield is well-known and, therefore, release of good varieties plays an important role to achieve the objective. He further mentioned that the responsibility of the Sub Committee is very important and, therefore, we should recommend release of only those varieties which are demonstrably superior and could replace the old varieties. He also mentioned the importance of the results of the minikit/adaptive trials in deciding the release of the varieties. He stated that unfortunately, these data are not becoming available from the field in time and this may be discussed in detail in the Crop Workshops. He stressed that time has come when alternative method was to be found out to conduct the minikit and adaptive trials and to collect reliable data.

4. During discussions of the various proposals of the varieties, the Committee took the following decisions:

(i) it has been observed that recommendations of the Workshop differed from crop to crop and some time variety to variety. To bring the uniformity in the recommendation of the Workshop, the Committee suggested that if a variety is found promising and suitable for cultivation, the Workshop might give the following recommendations:

> "Identified as promising variety for consideration. The observations of Central Sub-Committee on Crop Standards, Notification and Release of Varieties for following areas/conditions."

(ii) it has been observed that most of the varieties were not submitted by the Department of Agriculture, Tamil Nadu for testing under coordinated trials. The Committee recommended that Chairman of the Committee might like to write on this issue to the Vice-Chancellor of the Tamil-Nadu Agricultural University stating the importance of testing the varieties under Coordinated trials and about the policy decision taken in this regard by the Committee.

5. After this, the regular Agenda Items were taken up for discussion. The decision of the Committee on each item is indicated as follows:

Item No. 1: Confirmation of the Minutes of the 12th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 13th February, 1989.

6. The minutes of the earlier Meeting were confirmed.

Item No. 2: Review of action taken on the Minutes of the 12th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

7. The position indicated in the Agenda Notes was noted by the Committee/participants.

Item No. 3: Release of Varieties

8. Sixteen proposals of various varieties of different crops were considered for Release and Notification of release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated in Tables given below:

9. **Table No. 1 : Detail of the Varieties recommended for Release and Notification**

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Arhar (Red Gram)	Jagriti (ICPL-151)	Recommended for Release for cultivation in the Central Zone of the country.
2.	Berseem	BL-2	Recommended for Release for cultivation in Temperate Zone of the country.
3.	Cotton	Pusa-31	Recommended for Release for cultivation in North Zone.

1	2	3	4
4.	Paddy	Govinda* (IET 6155)	Recommended for Release for cultivation for following conditions: (1) Rainfed upland areas of UP, MP, Maharashtra and Gujarat (2) Irrigated areas of Pondicherry and multicropped irrigated areas of Uttar Pradesh particularly for the Paddy-lahi/potato wheat rotations. (3) Valleys of Uttar Pradesh hills upto 3,000/ elevation.
5.	Paddy	Aditya (IET 7613)	Recommended for release for cultivation for direct seeded rainfed upland areas with uneven distribution of rainfall coinciding with either vegetative (July-August) or reproductive (Sept.-Oct.) phase of crop growth. It is also suited for multiple cropping areas. It is recommended for Chhota Nagpur, Ranchi Districts in Bihar, Faizabad, Varanasi, Gorakhpur in Uttar Pradesh, Purulia, Bankur, in West Bengal, Bhubaneswar, Santhal Parganas in Orissa, Bastara Rewa in Madhya Pradesh, upland areas including Khammam, Bhadrachalam, parts of Srikakulam and Peddapuram of East Godavari of Andhra Pradesh, Chengalpattu, NorthArcot, Periyar Madurai, Ramanathapuram Districts in Tamilnadu and to rainfed uplands in North Eastern regions.
6.	Finger Millet	RAU-8	Recommended for release for cultivation in Finger Millet growing areas of the country.
7.	Soyabean	MACS-58	Recommended for release for cultivation in Central Zone (Maharashtra, Gujarat, Madhya Pradesh and Rajasthan).
8.	Wheat	HD 2380	Recommended for release for Peninsular Zone (Tamil Nadu, Andhra Pradesh, Karnataka and Maharashtra) and Northern Hill Zone (Hills of Jammu & Kashmir), Himachal Pradesh, (except Una district and Panonta valley) and Uttar Pradesh, (except Terai area). The variety is recommended for release considering its better rust resistance and grain quality.
9.	Wheat	HD 2428	Recommended for release considering that it has comparable Yield with HD 2329 and better resistance for brown and Yellow rust. The variety is recommended for cultivation for following area : Northern plains Zone comprising Punjab, Karnal, Kurukshetra Ambala and Sonepat districts of Haryana; Alwar, Bhratpur and Sriganganagar districts of Rajasthan; Western Uttar Pradesh, Gwalior, Bhind, Morena districts of Madhya Pradesh, Lower hills of Jammu and Kashmir.
10.	Wheat	*UP 1109	Recommended for release considering that it has better resistance for yellow rust. It is recommended for cultivation under irrigated and rainfed conditions of Northern Hill Zone.
11.	Wheat	Maghar (K 8027)	Recommended for release considering that it has better resistance for brown rust and suited for cultivation under low fertility rainfed conditions of NEP Zone.

* The variety has already been notified.

10. The details regarding important features of the above varieties are in Annexure II.

11. **Table No. 2 : Detail of the varieties required to be resubmitted by sponsoring authorities along with additional information**

S.No.	Crop	Variety	Remarks
1.	Oat	UPO 212	(i) The proposal may be resubmitted along with data on in vitro DMD and protein. (ii) Data of multi-location trial for 3 years may also be submitted.
2.	Cluster bean	Guara-80	(i) The proposal may be resubmitted along with more data of different years on quality and seed. (ii) Data on agronomic trials may also be submitted.

12. The sponsoring authorities are advised to resubmit the proposals (100 copies) along with desired information.

13· **Table No. 3 : Details of Varieties not recommended for release and notification**

S.No.	Crop	Variety	Remarks
1.	Soybean	PK 471	No distinct advantage over the available best check has been observed
2.	Soybean	PK 564	
3.	Wheat	HD 2385	It has no superiority over C-306

Item No. 4: Notification

14. Sixteen proposals of different varieties were considered for notification under section 5 of the Seeds Act. The recommendations of the Committee are indicated in the Table given below:

15· **Table No. 3 : Details of Varieties Recommended for notification for entire Country**

S.No.	Crop	Variety
1	2	3
1.	Cotton	Lam Hybrid-1
2.	Cotton	LH 886
3.	Foxtail Millet (Tinai)	K-3
4.	Little Millet (Samai)	Paiyur-1
5.	Finger Millet	TRY-1
6.	Finger Millet	CO 13
7.	Prosomillet (Panivargu)	CO 4
8.	Prosomillet (Panivargu)	Nagarjuna (L-1387)
9.	Prosomillet (Panivargu)	Sagar (L-5224)
10.	Sesamum	Rajeshwari
11.	Paddy	*IR-50

*Subject to the following conditions :

(i) IR-50 will not be grown in rainy season (Oct. to Feb.) i.e. Samba, Thaladi and Pishanam seasons in any circumstances in Tamil Nadu.

(ii) Department of Agriculture Tamil Nadu has assured that no seed of IR-50 will be distributed for above seasons. It was also clarified by the representative of Deptt. of Agriculture that through extension farmers have already been educated about the risk/danger involved in growing of the variety in rainy season.

16. Details of the important features of the above varieties are in Annexure III.

17· **Details of the Varieties not recommended for notification for want of more informations**

S.No.	Crop	Variety	Remarks
1.	Blackgram	ADT-4	The proposals may be resubmitted alongwith at least one year data generated under AICPIP.
2.	Blackgram	ADT-5	
3.	Blackgram	Vamban-1	
4.	Green gram	ADT-3	
5.	Horse gram	Paiyur-1	

18. The sponsoring authorities are requested to resubmit the proposals (100 copies) alongwith desired information.

Miscellaneous Item : Notification of Horse gram variety Man

19. The variety was earlier recommended Conditionally for notification Subject to submission of more information and views of Project Coordinator. The Chairman was authorised by the Committee to decide the notification after receipt of desired information. The information received was examined and Chairman approved the notification. The details of the morphological characters etc may kindly be seen in Annexure III.

ANNEXURE I

List of Participants who attended the 13th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held at 2.30 p.m. on 9th June, 1989 under the Chairmanship of DDG (CS), ICAR, Krishi Bhavan, New Delhi

1. Dr. R.S. Paroda, *Chairman*
Deputy Director General (CS)
Indian Council of Agril. Research,
Krishi Bhavan, New Delhi.

2. Shri T.V. Sampath,
Agriculture Commissioner,
Ministry of Agriculture,
Deptt. of Agri. & Corpn.,
Govt. of India, Krishi Bhavan,
New Delhi.

3. Shri B.M. Sharma,
Director (CP).

4. Shri Jugal Kishore,
General Manager (Production),
National Seeds Corporation Ltd.,
Beej Bhavan, Pusa Complex, New Delhi-12.

5. Dr. K. Mohan Naidu,
Director, Sugarcane Breeding Inst.,
Coimbatore, (Tamil Nadu).

6. Dr. Shankar Lal,
Project Director,
Directorate of Pulses, Kanpur.

7. Dr. J.P. Tandon,
Project Director (Wheat), IARI,
New Delhi.

8. Dr. P.K. Agarwal,
Head,
Division of Seed Sciences & Technology,
Indian Agricultural Research Institute,
New Delhi.

9. Shri Ahmad Hussain Khan,
Vill. & P.O. Usia, Distt. Ghazipur,
Uttar Pradesh.

10. Shri R.S. Arora,
Managing Director,
Century Seeds Pvt. Ltd.,
New Delhi-110 033.

11. Shri Randhir Singh,
Vill. & P.O. Mattar Shum, Distt. Hissar,
(Haryana).

12. Shri K.M. Hooda,
375/16, Hari Niwas, Jhajjar Road,
Rohtak, Haryana.

13. M.K. Pogulwar,
Director, Seed Certification Agency,
Pune, Maharashtra.

14. Shri B.U. Modi,
Director,
Gujarat State Seed Certification Agency,
Ahmedabad.

15. Shri D.V. Singh,
Managing Director,
Madhya Pradesh State Seed Certification
Agency, Bhopal.

16. Dr. Prem Singh Gill,
Director,
Punjab State Seed Certification Authority,
Chandigarh.

17. Shri K. Murugaiyan,
Director, Seed (Certification),
Coimbatore.

18. Shri S.K. Sindhwani,
Director,
Haryana State Seed Certification Agency,
Chandigarh.

19. S.M. Sharma,
Project Coordinator,
(Sesamum & Nigar), Jabalpur.

20. Shri A. Seetharam,
Project Coordinator,
(Small Millets), and i/c Project
Coordinator, (Sunflower).

21. Dr. C.R. Hazra,
(Project Coordinator, Forage Crops)
I.G.F.R.I., Jhansi-284 003,
Uttar Pradesh.

22. Shri S.v. Jain,
Additional Director of Agriculture
(Research),
Department of Agriculture,
Jaipur, Rajasthan.

23. Shri A. Narayana Swamy,
Joint Director,
K.S.S.C.A.Bangalore, Karnataka.

24. Shri T. Thanikachalam,
Joint Director of Agriculture (SSF)
Govt. of Tamil Nadu, Madras-5.

25. Dr. Murari Lal,
Joint Director (Agril.) Delhi,
Administration Delhi.

26. Shri M. Rai,
Asstt. Director General (Seeds) ICAR,
New Delhi.

27. Shri M.V.S. Sastry,
Principal,
Scientism and Head,
Division of Plant Breeding,
Directorate of Rice Research, Hyderabad.

28. Shri N.S. Tunwar,
Deputy Commissioner (QC)
Department of Agriculture and Cooperation,
Ministry of Agriculture, New Delhi.

29. Shri M.S. Shukla,
Deputy Seed Officer,

30. Shri D.S. Mishra,
STA (Seeds).

ANNEXURE II

The details of important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Thirteenth Meeting held on 9th June, 1989

1. Crop	:	Arhar or Pigeonpea (*Cajanus cajan* (L.) Mill sp.)
Name of the variety	:	Jagriti (ICPL 151)
Sponsored by	:	All India Coordinated Pulses Improvement Project (AICPIP), Directorate of Pulses Research, Kalyanpur, Kanpur - 208 024 (U.P.). and The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru P.O., A.P. - 502 324, India.
Parentage with details of its pedigree	:	ICPX 74092 (ICP 6997 × Prabhat)-B-16-1-H3-B × HB
Description of variety :		
(a) Plant height	:	Medium averaging about 40 cm shorter than UPAS 120
(b) Distinguishing morphological characters		
(i) Plant type	:	Semi-spreading and determinate
(ii) Stem	:	Green color
(iii) Leaves	:	Narrow and dark green usually most leaves drop as each flush of pods matures.
(iv) Flowers	:	Yellow with red streaks on the back of the standard petal.
(v) Pods	:	Green with dark purple streaks. Pods are borne in large loose clusters at the tops of branches
(vi) Seeds	:	Large round cream colour with a brown eye, averaging 10.8 g/100 seeds compared with 6.9 g/100 seeds for UPAS 120
(c) Maturity	:	About 4 days earlier than UPAS 120. The difference becomes greater than further north the crop is grown.
(d) Reaction to major disease	:	Field resistance to sterility mosaic disease
(e) Reaction to major pests	:	Susceptible to *Heliothis* and *Maruca* damage. In unsprayed trials at ICRISAT Center ICPL 151 (Jagriti) has averaged about the same podfly and total insect damage as UPAS 120.
Average Yield	:	20-24 quintals/ha.
Agency responsible for maintaining breeder seed	:	ICRISAT, Patancheru P.O., Andhra Pradesh - 502 324

Crop	:	Berseem (*Trifolium alexandrinum* L.)
Name of the variety	:	B.L.2
Sponsored by	:	Punjab Agricultural University, Ludhiana
Parentage with details of its pedigree	:	Multiline from indigenous material
Recommended ecology	:	The optimum temperature for its maximum growth is between 10°C. and 35°C.
Description of variety :		
(a) Plant height	:	60.5 cm
(b) Distinguishing morphological characters	:	It is a quick growing variety. It remains green for a longer period and thus supplies one additional cutting of green fodder. It has attractive and bold seeds.
(c) Maturity (Range in number of days) Seedling/ Transplanting to flowering, seed to seed	:	
Seeding to flowering	:	200-210
Seed to seed	:	240-250
(d) Maturity group	:	Medium
(e) Reaction to major diseases under field and controlled condition (Reaction to physiological strains/races/bio types to be indicated wherever possible)	:	Stem-rot caused by *sclerotinia* trifoliorum is a serious disease of berseem. Based on three year data, BL-2 is comparatively more resistant to stemrot than the check varieties Vardan and Mescavi.

Average yield under normal conditions (yield in kg/hect) : (i) Green fodder yield : 42180

(ii) Dry matter yield : 7640

(iii) Seed yield : 771

Agency responsible for maintaining breeder seed : Punjab Agricultural University, Ludhiana

Specific recommendations, if any for seed production : To obtain good seed yield, the crop should be left for seed production after taking the last cutting in the first fortnight of April.

3. Crop : American Cotton *Gossypium hirsutum* Linn.

Name of the variety : Pusa-31

Sponsored by : Director, I.A.R.I. (Pusa), New Delhi - 110 012

Parentage with details of its pedigree : H14 × S69-973

(1) S69-973 Exotic US upland

(2) H-14 Punjab American Adaptive type

Recommended ecology : Suitable for irrigated Northern Cotton Zone

Description of variety/hybrid :

(a) Plant height : Medium tall (1.00 meter as compared to 1.20 m of H777)

(b) Distinguishing morphological characters : Medium, tall with one or two Monopodia, medium hairy broad 4-5 lobes, bigger round boll (4.5 gm as compared to 3.0 gm of H777)

(c) Maturity : 140 to 150 days

(d) Maturity group : Early

(e) Reaction to major diseases : Reaction to black arm grade (2.96) as compared to Zonal Check Bikaner Nerma (2.96) but better than local checks (3.36).

(f) Reactions to major pests : Jassid injury grade 2.18 as compared to 1.25 of Bikaneri Nerma

Average yield under normal conditions (Yield in kgs/hectare) : Average seed cotton yield 23.60 q/ha. in Normal spacing of 60 cm × 30 cm and 22.96 q/ha under close spacing (60 cm × 15 cm) as compared to 19.22 q/ha and 17.95 q/ha of Bikaneri Nerma Zonal check respectively.

Agency responsible for maintaining breeder seed : Genetics Division, Indian Agricultural Research Institute (Pusa), New Delhi - 110 012.

Specific recommendations if any for seed production : Proper isolation distances as per recommendation for cotton from any other hirsutum varieties has to be maintained.

4. Crop : Paddy (*Oryza sativa* L.)

Name of the variety : Govind (IET 6155)

Sponsored by : G.B. Pant Univ. of Agri. and Tech., Pantnagar, Distt. Nainital, Uttar Pradesh-263 145.

Parentage with details of its pedigree : IR 20 × IR 24
UPR 82-1-7-1-2-1-1

Recommended ecology : Rainfed uplands

Description of variety/hybrid :

(a) Plant height : 90 cm

(b) Distinguishing morphological characters : (1) Semi-dwarf plants with erect leaves

(2) Long slender grains

(3) Panicles with tip awns

(4) Green apiculus and leafsheath

(5) Slow senescence

(c) Maturity

Seeding to flowering (under transplanting) : 75-85 days

Seed to seed : 95-100 days (under direct seeding)
105-110 days (under transplanting)

(d) Maturity group : Early

(e) Reaction to major diseases : Resistant to bacterial leaf blight, leaf blast and brown leaf spot diseases

(f) Reactions to Major pests : Moderately resistant to leaf hoppers and leaf folders

Average yield under normal conditions (yield in kgs/hectare)	:	30-35 q/ha under direct seeding
Agency responsible for maintaining breeder seed	:	G.B. Pant University of Agricultural & Technology, **Pantnagar**
Specific recommendations, if any for seed production	:	No

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5. Crop	:	Paddy
Name of the variety	:	Aditya, Kanti, Ravi (IET 7613)
Sponsored by	:	Directorate of Rice Research, Rajendranagar, Hyderabad - 500 030, Andhra Pradesh.
Parentage with details of its pedigree	:	M 63-83 × Cauvery Pedigree : RP 1670-1418-2205-1582
Recommended ecology	:	Rainfed uplands
Description of hybrid/variety :		
(a) Plant Height	:	90 cms
(b) Distinguishing morphological charactors	:	Semi-dwarf variety with strong culm, leaves, medium broad, dark green attached to the main culm at acute angle, leaf sheaths tightly clasping the main stem grains long bold, hill dull straw kernel white. All plant parts green.
(c) Maturity	:	Under direct seeded conditions 60-65 days for flowering, 85-90 days to maturity, under transplanted conditions 60-70 days for flowering and 90-95 days to maturity.
(d) Maturity group	:	Very early
(e) Reaction to major diseases under field and controlled conditions	:	Resistant to blast, tolerant to brown spot, BLB, RTV
(f) Reactions to major pests	:	Susceptible to Gallmidge, BPH
Average yield under normal conditions	:	The variety recorded mean yield upto 2.8-3.0 t/ha under direct seeded rainfed conditions; under transplanted rainfed 2.8-3.9 t/ha and under direct seeded irrigated conditions 3.3-4.0 t/ha as against 800-1000 kg/ha for traditional varieties and 1.5-2.0 t/ha for checks.
Agency responsible for maintaining breeder seed	:	Directorate of Rice Research, Rajendranagar, Hyderabad - 30 (A.P.).
Specific recommendations, for seed production	:	Pure seed can be produced with seed rate of 100 kgs/ha drilled in rows with 20 cm between rows to ensure 300 panicles/sq.m. If planted seed rate of 40 kgs/ha 25 days seedlings should be planted at 10 × 10 cm spacing, fertiliser 50 P and 30 K as basal and 80 N/ha in 3 splits (basal, tillering & panicle initiation).

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6. Crop	:	Ragi (Finger Millet)
Name of the variety	:	RAU-8
Sponsored by	:	IDRC-ICAR-Co-ordinated Millet Improvement Project, Rajendra Agriculture University, Bihar, Pusa.
Parentage with details of its pedigree	:	BR 407 × Ranchi local
Recommended ecology	:	Mid maturity, resistant to drought and diseases
Description of variety/hybrid :		
(a) Plant height	:	80 cm
(b) Distinguishing morphological characters	:	Productive tillers/plant : 2.6 50% Flowering days : 75
(c) Maturity	:	Main earlength : 7 cms No. of fingers : 7
(d) Maturity group	:	Medium maturity
(e) Reaction to major diseases under field and controlled conditions	:	Moderately resistant to blasts
(f) Reaction to major pests	:	Better over checks for grass hopper and Heliothis Sp
Average yield under normal conditions (yield in kg/ha)	:	2200 — 2500 kg/ha
Agency responsible for maintaining breeder seed	:	Millet Breeding Scheme, Rajendra Agricultural University, Dholi (Muzaffarpur).
Specific recommendations, if any for seed production	:	Progeny row

7. Crop		Soyabeen (*Glycine max* (L.) Merr.
Name of the variety	:	MACS-58
Sponsored by	:	Indian Council of Agricultural Research, New Delhi
Parentage with details of its pedigree	:	JS-2 × Improved Pelican E58-5-3-6-10-BK 10
Recommended ecology	:	The proper season for growing soybean is kharif (i.e. June/July sowing). It requires rainfall of about 700 to 800 mm which should be evenly distributed throughout the crop growth period. In low rainfall areas, this variety can be satisfactorily grown by providing supplementary irrigations. This can be grown on medium black to heavy black soils. For obtaining high yields soil should be fertile, well-drained and loamy with pH range of 6·5 to 7.5.
Description of variety/hybrid :		
(a) Plant height	:	Plants are semi-determinate with erect growth habit, with average height of 65 cm.
(b) Distinguishing morphological characters	:	(i) Marked with purple pigmentation at the hypocotyl region at seedling stage. (ii) Plants are semi-determinate with erect growth habit (iii) Leaves are oblong in shape (iv) Duration from sowing to 50% flowering is 40 to 45 days (v) Flowers are purple in colour (vi) Stem and pods are covered with dense pubescence which turn brown at maturity. (vii) Pods are open to sunlight (viii) Seeds are round, shining with light brown hilum and medium to bold in size (100 seed weight 11 to 15 g) with cream coloured seed coat. (ix) Pods are non-shattering type
Maturity		It matures in 90 to 100 days depending upon soil type
Maturity group	:	Midlate
Reactions to major pests	:	Under field conditions no incidence of any pest attack was observed
Average yield under normal conditions (yield in kgs/ha)	:	2000 to 2500 kg/ha
Agency responsible for maintaining breeder seed	:	Director, Maharashtra Association for the Cultivation of Science, Law College Road, Pune-411 004.

8A. Crop	:	Wheat (*Triticum aestivum* L.)
Name of the variety	:	HD 2380
Sponsored by	:	Director, Indian Agricultural Research Instt., New Delhi - 12
Parentage with details	:	HD 2255 × HD 2257
Recommended ecology	:	Timely sown, high fertility irrigated conditions Peninsular Zone
Description of the variety/hybrid :		
(a) Plant height	:	75-90 cm (double dwarf)
(b) Distinguishing morphological characters	:	Ears oblong, slight/non waxy, creamish in colour mid-lax and mid long and fully bearded. Glumes glabrous, with long and straight beak and of elevated shape. Keel not inflacted.
(c) Maturity	:	48-64 days (seeding to heading)
(d) Maturity group	:	Medium early
(e) Reaction to major diseases	:	Possesses high field resistance to all the three rusts under natural and artificial epidemic conditions. Also shows seedling resistance to all the 12 races of black rust, (15 out of 18) to leaf rust races including races 77A-1 and race 104 complex.
(f) Reaction to major pests	:	No incidence of insect pest under field conditions
Average yield under normal conditions (yield in kg/ha)	:	31.4 q/ha on an average of 4 years (43 trials) in the All India Coordinated Wheat Trials.
Agency responsible for maintaining breeder seed	:	I.A.R.I., New Delhi - 110 012

8B. Crop	:	Wheat (*T. aestivum*)
Name of the variety	:	HD 2380
Sponsored by	:	Director, I.A.R.I., New Delhi.
Parentage with details	:	HD 2255 × HD 2257
Recommended ecology	:	Medium fertility irrigated and low fertility rainfed conditions under timely sown conditions. *Northern Hills Zone*
Description of variety/hybrid :		
(a) Plant height	:	76-107 cm
(b) Distinguishing Morphological characters	:	Ears oblong, slightly non-waxy, creamish in colour, mid-lax, mid-long and fully bearded, glumes glabrous with long and straight beak and of elevated shoulder.
(c) Maturity	:	113-132 Rainfed 130-138 Irrigated } Seed to heading
(d) Maturity group	:	Medium early
(e) Reaction to major diseases	:	HD 2380 has shown high resistance to all the three rusts under both natural and artificial conditions of infection under field conditions. It is also resistant to all the races of black rust, 18 out of 20 races of brown rust including races 77A, 77A-1 and 104 complex and all the races of yellow rust except race I to which none of the cultivars is susceptible.
(f) Reaction to major pests	:	No major pest incidence has been observed in the field
Average yield under normal conditions	:	HD 2380 has given an average yield of 3280 kg under medium fertility irrigated condition and 2470 kg under low fertility rainfed conditions in the Co-ordinated Trials.
Agency responsible for maintaining breeder seed	:	I.A.R.I., New Delhi.

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9. Crop	:	Wheat (*Triticum aestivum* L.)
Name of the variety	:	HD 2428
Sponsored by	:	Director, Indian Agricultural Research Institute, New Delhi - 12
Parentage with details	:	HD 1949 × HD 2160
Recommended ecology	:	High fertility, normal sown irrigated conditions
Description of variety/hybrids :		
(a) Plant height	:	Dwarf (72-83 cm)
(b) Distinguishing morphological characters	:	
(i) Early growth habit	:	Semi-erect
(ii) Tillering capacity	:	Very good
(iii) Colour of foliage & stem	:	Green
(iv) Ear shape	:	Oblong
(v) Ear density	:	Mid-lax
(vi) Awning	:	Fully awned
(vii) Glume colour	:	Creamish
(viii) Glume hairiness	:	Glabrous
(ix) Awn colour	:	Creamish
(x) Fragility of rachis	:	Non fragile
(xi) Threshability	:	Easy
(xii) Grain colour	:	Amber
(xiii) Grain texture	:	Hard
(xiv) Grain size	:	Medium bold
(c) Maturity	:	Seeding to flowering 81-110 days (1985-86)
(d) Maturity group	:	Medium early
(e) Reaction to major diseases	:	HD 2428 possesses higher field resistance to all the three rusts under both natural and artificial conditions.
Average yield under normal conditions (yield in kg/ha)	:	HD 2428 gave an average grain yield of 4430 kg/ha in multilocation trials conducted over a period of three years in the All India Coordinated Trials.
Agency responsible for maintaining breeder seed	:	I.A.R.I., New Delhi - 12

10. Crop : Wheat (*Triticum aestivum*)

Name of the variety : UP 1109

Sponsored by : G.B.P.U.A. & T., Pantnagar

Parentage with details of its pedigree : UP 262/UP 368 Pedigree method

Recommended ecology : Normal sown Irrigated and rainfed conditions

Description of variety/hybrid :

(a) Plant height : 100 - 120 cms

(b) Distinguishing morphological characters : (i) White glume at maturity
(ii) Base spike sterility

(c) Maturity : 150-155 days

(d) Maturity group : Medium late

(e) Reaction to major diseases : Resistant to yellow rust

(f) Reaction to major pests : Not available

Agency responsible for maintaining breeder seed : Wheat Breeder, G.B. Pant University of Agriculture & Technology, Pantnagar.

Specific recommendation if any, for seed production : Normal, as for any other wheat variety

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11. Crop : Wheat (*Triticum aestivum* L.)

Name of the variety : MAGHAR (K 8027)

Sponsored by : Economic Botanist (Rabi Cereals), Deptt. of Genetics and Plant Breeding, C.S. Azad University of Agriculture and Technology, Kanpur - 208 002.

Parentage with details of its pedigree : (HD 1696 × K 852) × K 852

Recommended ecology : Rainfed Normal sown low fertility conditions

Description of variety/hybrid :

(a) Plant height : 110 - 115 cm.

(b) Distinguishing morphological characters : Dull white straw colour, Ears glabrous

(c) Maturity : 85-90 days to flower 140-145 days to maturity

(d) Maturity group : Late in maturity

Average yield under normal condition (Yield in Q/ha) : 25 to 40 Qtls.

Agency responsible for maintaining breeder's stock : Economic Botanist (Rabi Cereals), C.S. Azad University of Agriculture & Technology, Kanpur.

Specific recommendations for seed productions : Medium fertility with two irrigations will give 30 to 40% increase in yield.

ANNEXURE III

Important features of the Varieties recommended for Notification in the 13th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop	:	Cotton
Name of the variety	:	Lam Hybrid-1 (Intra hirsutum hybrid)
Parentage with details of its pedigree	:	It is a cross between LMSS 2A × LMSS-85. Parents selected from germplasm. LMSS 2A is a selection from Khandwa 2(MB) and LMSS-85 is a selection from CPH 4085.
Breeder/Institute responsible for maintaining breeder's stock	:	Senior Scientist (Cotton), Regional Agricultural Res. Station, Lam, Guntur-522 034 (or) Cotton Breeder, R.A.R.S. Lam, Guntur.
Description of variety/hybrid	:	Lam Hybrid
Parentage	:	Intra hirsutum hybrid (LMSS 2A × LMSS 85)
(a) Plant height	:	140 - 160 cm
(b) Distinguishing morphological characters :		
Leaves	:	Small hairy with light green colour
Stem	:	Sturdy and erect with 2-3 strong monopodia and upto 20-25 sympodia with short inter nodes.
Plant habit	:	Open type with less foliage
Flower	:	Petal - Yellow Pollen - whitish yellow - Yellow (Mainly yellow)
Boll	:	Weight 5-6 g, oval shape medium sized boll with 3-5 locules and mostly shouldered.
Seeds	:	Medium, fuzzy
Days to 50% flowering	:	50 days
(c) Duration of the crop	:	140-150 days
Description of the parents of the hybrid :		
Female parent	:	LMSS 2A
Plant species	:	Gossypium hirsutum L.
Height	:	110-130 cm
Seed to flower	:	55 to 65 days
Duration	:	155 to 165 days
Habit—Plant type	:	Slightly bushy, spreading and indeterminate with 1-2 monopodia and 15-20 sympodia
50% flowering	:	65 days
Flower colour	:	Yellow
Petal spot	:	Absent
Pollen	:	Cream
Stem colour	:	Greenish or slightly pinkish
Leaf lobing	:	Deep lobing, medium sized
Leaf shape	:	Highly pubescent, small mostly lobed, middle nose pointed
Boll characters	:	Round to oval
Foliage colour	:	Dull green
Mean halo length	:	23-24 mm
Ginning per cent	:	34 to 35 (Selection from CPH 4085)
Male parent	:	LMSS 85
Plant species	:	*Gossypium hirsutum* L.
Height	:	160-180 cm
Duration	:	150-160 days

Habit—Plant type	:	Erect triangular with short nodes and inter nodes, 1-2 monopodia, 17-20 sympodial branches in upward direction. Appears slightly bushy at early stages.
50% flowering	:	60-62 days
Flower-Petal colour	:	White
Petal spot	:	Absent
Pollen	:	Yellow
Stem	:	Pinkish/Tender, barbadense type less hairy
Leaf lobing	:	Broad, 3 5 lobed
Leaf shape	:	Slightly cupshaped, glabrous
Foliage colour	:	Green
Mean halo length	:	28 to 29 mm
Ginning percent	:	34 to 35
Boll	:	Light green, oval shouldered
Describe atleast two identifiable and distinguishable morphological characteristics of the veriety	:	Identifying characters of LH1 Hybrid (1) Small sized hairy light green leaves (2) 2-3 strong monopodia drooping towards soil (3) Flower yellow coloured (4) Light green shouldered bolls
Maturity group		
Duration of the crop	:	140-150 days
Days to 50% flowering	:	50 days
Recommended ecology	:	LH1 is useful for cultivation in all the rainfed and irrigated areas in place of H_4 and H_6 in Andhra Pradesh.
Yield (in kgs/ha)	:	2198 kg/ha
(a) Commercial product	:	—
(b) Seed	:	—

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2. Crop	:	American cotton (*Gossypium hirsutum* L.)
Name of the variety	:	LH 886 (Punjab Narma 886)
Parentage	:	Advanced generation Selection from LH 62 × EC 34859
Breeder/Institute responsible for maintaining breeder's stock	:	Senior Cotton Breeder and Zonal Coordinator (North Zone), Cotton Research Laboratory PAU, Ludhiana.
Description of variety :		
(a) Plant height	:	Average plant height in 142 cm
(b) Distinguishing morphological characters	:	Semi spreading with 2-3 monopods, about 20 sympods, medium sized leave with round bolls and pointed tip.
(c) Maturity in days	:	170-175 days
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	Round bolls with pointed tip. Medium sized leaves
Maturity group	:	Medium early in maturity
Recommended ecology	:	Suitable for sowing upto May 15 under assured irrigation. It responds we upto 150 kg/ha of Nitrogen, seed rate 25 kg/ha and a spacing of 75 × 15 cm
Yield (in kgs/hectare)	:	2600 kg/hectare
(a) Lint	:	910 kg/hectare
(b) Seed	:	1690 kg/hectare

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3. Crop	:	Foxtail Millet (*Tenai*) (*Setaria italica*)
Name of the variety	:	K-3
Parentage with details of its pedigree	:	Pureline selection from germplasm
Breeder/Institute responsible for maintaining breeder's stock	:	Agricultural Research Station, Koilpatti, Tamil Nadu

Description of variety/hybrid

(a) Plant height : 13[illegible] cms

(b) Distinguishing morphological characters : Green plant type. Long panicle with yellow grain, panicle is cylindrical in shape.

(c) Days to 50% flowering/days to maturity : 42 days from seedling to flowering it matures in 82 days

Describe atleast Two identifiable and distinguishable morphological characteristics of the variety : Green plant type, Grain colour : Yellow

Recommended ecology : Tropics in Tamil Nadu

Yield (in kgs/hectare) :

(a) Commercial product : 1621

(b) Seed : 95% of commercial grain

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4. Crop : Little Millet (Samai) (*Panicum milliare*)

Name of the variety : Paiyur-1

Parentage with details of its pedigree : Pureline selection from Sathur local

Breeder/Institute responsible for maintaining breeder's stock : Regional Research Station, Paiyur

Description of variety/hybrid :

(a) Plant height : 110 to 120 cm

(b) Distinguishing morphological characters : Tall, erect and non-lodging with dark green foliage and long semi-compact panicle with brown seeds.

(c) Days to 50% flowering/to maturity :

	DPI 1213	*Co* 2
Flowering	65-70	50-55
50% Maturity	105-110	90-95

Describe atleast Two identifiable and distinguishable morphological characteristics of the variety : Long semi compact panicle. Tall nonlodging at maturity Brown seeds

Recommended ecology : Tropics of South India

Yield (in kgs/hectare) :

(a) Commercial product : Grains 873 Straw 2600

(b) Seed :

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5. Crop : Finger Millet (Ragi) *Eleusine Coracana*

Name of the variety : TRY-1

Parentage with details of its pedigree : Reselection from accession 350 (HR 374) for sodic soils

Breeder/Institute responsible for maintaining breeder's stock : Soil salinity Research Centre, Trichy

Description of variety/hybrid :

(a) Plant height : 77.5 cm

(b) Distinguishing morphological characters :

Number of productive tillers : 5.2

Number of tiller : 5.7

Number of earheads plant : 6.2

Number of fingers earhead :
Finger length :
1000 grain weight (g) :
} not indicated

Flower : Pigmented

Glume : Pigmented

Stem colour : Green

Nodal region : Pigmented

Earhead shape : Incurved

(c) Days to 50% flowering : 74 days

Days to maturity : 102 days

Describe atleast Two identifiable and distinguishable morphological characteristics of the variety	:	Flower-pigmented Nodal region pigmented. Earhead shape incurved
Recommended ecology	:	Tolerant to sodic soils with a ph/range of 8.5 and above
Yield (in kgs/hectare) :		
(a) Commercial Product	:	4100
(b) Seed	:	3500

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6. Crop	:	Finger Millet (Ragi) (*Eleusine coracana*)
Name of the variety	:	Co-13
Parentage with details of its pedigree	:	Co 7 × TAH 107
Breeder/Institute responsible for maintaining breeder's stock.	:	School of Genetics (Millets Breeders Station), TNAU, Coimbatore
Description of variety/hybrid :		
Origin	:	Co 7 × TAH 107
Pigmentation	:	Purple
Grain colour	:	Light brown
Plant height	:	80 to 90 cm
Earhead shape	:	Open
No. of productive tillers	:	3 to 5
No. of fingers	:	Mean of 12 (Range 10-17)
Duration	:	95 to 100 days
Weight of 1000 seeds	:	1.7 gram
Average yield/ha (Dry)	:	3600 kg/ha (I) - 2300 (RF)
Straw yield/ha (Dry)	:	10000 kg/ha (I) - 7500 (RF)
Maximum grain yield in districts	:	700 kg/ha
Maximum grain yield in station trials	:	4667 kg/ha (I) - 2500 (RF)
Glume colour	:	Fresh purple at milk stage, Light purple at maturity
Special feature	:	(1) Easy threshability (2) Synchronized maturity of all earheads (3) Non lodging (4) Tolerant to blast
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	Purple colour of ear open fingers
Recommended ecology	:	Periyar, Coimbatore, Dharmapuri, Salem, North Arcot, South Arcot Distt.
Yield (in kgs/hectare) :		
(a) Commercial product	:	3500-4000 kg. grain 10000 kg. straw
(b) Seed	:	80% of grain yield

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7. Crop	:	Proso Millet (Panivaragu) (*Panicum miliaceum* L.)
Name of the variety	:	Co-4
Parentage with details of its pedigree	:	Pureline selection from Sengathur
Breeder/Institute responsible for maintaining breeder's stock	:	School of Genetics, TNAU, Coimbatore
Description of variety/hybrid		
(a) Plant height	:	65-70 cm
(b) Distinguishable morphological features	:	Densely pubescent heavy tillering plant with shining yellow bold grain
(c) Days to 50% flowering	:	35-40 days
Days to maturity	:	70-75 days
(d) Reaction to major disease	:	No major disease was noticed

(e) Reaction to major pests in field conditions	:	Tolerant to shootfly damage in field condition
Recommended ecology	:	Tropics of Tamil Nadu
Yield (in kgs/hectares)		
(a) Commercial product	:	1400
(b) Seed	:	1250

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8. Crop	:	Proso Millets (*Panicum miliaceum* L.)
Name of the variety	:	Nagarjuna (L-1387)
Parentage with details of its pedigree	:	This variety was a selection made from the local collections in Prakasam district. This variety was developed through pure-line selection.
Breeder/Institute responsible for maintaining breeder's stock	:	Assistant Millet Specialist (A.P. Agricultural University), Regional Agricultural Research Station, Lam, Guntur - 522034.
Description of variety :		
(a) Plant height	:	80-90 cm
(b) Distinguishing morphological characters :		
(1) *Plant*		
Leaves	:	Light green, sparsely hairy
Stem	:	Light green, slender, medium hairy
Panicle	:	Semiloose
Growth habit	:	Erect growing, profusely tillering (5-6 basal tillers and 8-11 nodal tillers) turns yellow on maturity.
(2) *Seed*		
Colour	:	Creamy yellow, shining
Shape	:	Round
Size	:	Bold
Weight of 1000 seeds	:	6.2 g
(3) *Maturity*		
50% panicle emergence	:	25-30 days
Maturity	:	60-65 days
Average grain yield	:	21 q/ha
Average fodder yield	:	30 q/ha
(c) Duration of the crop	:	60-65 days
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	(i) Light green, sparsely hairy leaves (ii) Erect growing with 5-6 basal and 8-11 nodal tillers (iii) Panicle semiloose (iv) Seed colour creamy yellow, shining
Recommended ecology	:	Nagarjuna is suitable for cultivation in the rainfed areas of Guntur and Prakasam districts of Andhra Pradesh.
Yield	:	20-24 q/ha

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9. Crop	:	Proso Millet (*Panicum miliaceum* L.)
Name of the variety	:	Sagar (L-5224)
Parentage with details of its pedigree	:	This variety has been developed through pure-line selection method of crop improvement. The original base material was collected out of local crop from farmers fields of Prakasam district.
Breeder/Institute responsible for maintaining breeder's stock	:	Assistant Millet Specialist (A.P. Agricultural University), Regional Agricultural Research Station, Lam, Guntur - 522 034.
Description of the variety :		
(a) Plant height	:	90-110 cm
(b) Distinguishing morphological characters :		
(i) *Plant :*		
Leaves	:	Dark green thick hairy
Stem	:	Thin turns to white on maturity
Panicle	:	Semiloose, sickle shaped
Growth habit	:	Erect growing with 6-8 basal tillers and 9-12 nodal tillers

(ii) *Seed :*
Colour : Olive grey
Shape : Round
Size : Bold
Weight of 1000 seeds : 7.3 g
Grain protein : 14.8%

(iii) *Maturity*
50% panicle-Emergence : 40-45 days
Maturity : 82-87 days
Average grain yield : 22 q/ha
Straw yield : 32 q/ha

(c) Duration of the crop : 82-87 days

Describe atleast two identifiable and distinguishable morphological characteristics of the variety. :
(1) Dark green thick hairy leaves
(2) Erect growing with 6-8 basal and 9-12 nodal tillers
(3) Panicle semi loose, sickle shaped
(4) Seed colour olive grey

Maturity group : Sagar (L 5224) is a medium maturing (80-85 days) variety

Recommended ecology : Sagar (L 5224) is suitable for cultivation in the rainfed areas of Guntur and Prakasam districts of Andhra Pradesh as a catch crop during rabi season.

Yield : 20-22 q/ha.

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10. Crop : Sesamum (*Sesamum indicum*)

Name of the variety : "Rajeshwari"

Parentage with details of its pedigree : N. 62-39 It is an entry from Jabalpur, Madhya Pradesh

Breeder/Institute responsible for maintaining breeder's stock : Assistant Oilseed Specialist (Sesamum), Regional Agricultural Research Station, Jagtial (A.P.A.U.), Karimnagar - 505 327.

Description of variety :

(a) Height : 80 to 100 cm

(b) Habit of growth : Herbaceous annual

(c) Branches : 4-6 effective branches, erect.

(d) Stem : Quadrangular, hairy, pale green in colour

(e) Leaves : Simple, opposite, decussate at base and alternate at above, exstipulate shape variable, upper leaves ovate.
Margin : The margin of leaves show gradation from entire to serrate, to deeply dentate.
Surface : Glabrous, herbaceous texture.

(f) Flowers : Solitary, pedicillate, bisexual, zygomorphic, hypogynous
Colour : White to slightly purple colour with slight hairs
Flowering phase : 30-60 days
Calyx : Persistant, lobes oblong, pubescent, sepals-5
Corolla : Bilabiate, upperlip smaller, globed lower lip bigger, 3 lobed
Androecium : Stamens, didynamous, Ompipetalous, filaments glabrou anthers dorsifixed.
Gynoecium : Ovary superior, bicarpellally, synarpous 4 locular with many ovules in each locule on axile placentation style terminal, filiform. Stigma bifid.

(g) Fruits : Oblong, tetra locular capsule

(h) Seeds : Many, flat, elliptic, cotyledons rich in oil seed colour white and medium to bold sized.

Describe atleast two identifiable and distinguishable morphological characteristics of the variety : Medium height (80-110 cm.), with 4-6 effective branches, flowering in 30-35 days with larger flowering phase (30 days), dark green foliage, with white to slightly purple colour of flowers, capsulerlong, colour of the seed is white and size is bold.

Maturity group (days) : Medium
Kharif : 80-82
Rabi : 85-90

Recommended ecology : Suitable for late kharif and rabi/summer seasons

Yield (in kgs/ha) :

(a) Commercial product : Commercial product is seed

(b) Seed : 5-7 q/ha in kharif (rainfed) & 9-11 q/ha in rabi (irrigated)

(c) Oil content : 50%

11. Crop : Paddy

Name of the variety : IR-50

Parentage with details of its pedigree : IR-2153-14-1-6-2/IR 28/IR 36

Breeder/Institute responsible for maintaining breeder's stock : Paddy Breeding Station, School of Genetics, Coimbatore

Description of variety/hybrid :

(a) Plant height : 70-75 cm

(b) Distinguishing morphological characters :

Habit	*Erect*
Anthocyanian pigment	Absent
Internode	Green
Leaf sheath	Green
Pulvinus	Green
Septum	Green
Leaf axil	Green
Junctura	Colourless
Lingule	White
Auricle	Colourless
Panicle	Long, drooping
Lemma & Palea	Green at emergence
Apiculus	Green
Husk colour	Straw
Rice colour	White
Abdominal white	Absent
Length of grain (mm)	8.9
Breadth of grain (mm)	2.3
L/B ratio	3.86
Thickness of grain (mm)	1.8
1000 grain wt. (g)	20.35

Describe atleast two identifiable and distinguishable morphological characteristics of the variety : Profusely productive tillering

Maturity group : Short duration

Recommended ecology : Short duration variety with High yielding potential

Yield (in kgs/hectares) :

(a) Commercial product : 5 to 6 tonnes per hectare

(b) Seed : 4 to 5 tonnes per hectare

12. Crop : Horse Gram (*Kulthi*) (*Macrotyloma Uniflorum* (Lam Verde)

Name of the variety : MAN

Parentage with details of its pedigree : Selected from early erect type from bulk sample collected from stock available at Pulse Research Station Badnapur.

Breeder/Institute responsible for maintaining breeder's stock : Plant Breeder, All India Co-ordinated Research Project for Dry land Agriculture, Krishak Bhavan, Newar DAV College, Solapur - 413 002.

Description of variety : Plant height is 40-55 cm with erect in Growth habit. Leaves are dark green and pointed at tip, small flowers concentrated at main branch. Matures in 100-105 days. Seed colour is dark brown with 100 grain weight. 2.57 gm. contents protein 18·96. Avereage yield is 681.kg./ha Suitable for drought prone area—

Yield (in kg/hectare) : 1000.00 kgs/ha.

(a) Commercial Production : 680-681 kgs/ha

(b) Seed

सत्यमेव जयते

Proceedings of the Fourteen Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 1st September, 1989 under the Chairmanship of DDG (CS), ICAR

The list of the Participants is annexed as Annexure I.

2. The Chairman welcomed the participants and stated that Committee is meeting almost after every three months to ensure that proposals received for release/notification are considered within three months after their receipt in the Secretariat of the Committee. He further stated that he has advised all the Project Directors/Coordinators to ensure timely submission of the proposals to the Secretariat within three months after their identification in the Workshop. Thus if the sponsoring authority is able to submit the proposal within three months, it will facilitate the release and certified seed production of the variety within six months after its identification in the Workshop. He also commended the prompt action taken by the Secretariat of the Central Sub Committee on Crop Standards, Notification and Release of Varieties in issuance of the proceedings of the Meetings, issuance of Gazette Notification, follow up action etc.

3. During discussion of the various proposals, the following important recommendations were made by the Committee:

(i) The possibility to provide Hindi version of the main body of Agenda Notes might also be explored so that some of the members who wish to have the Agenda Notes in Hindi, could be circulated the same.

(ii) All Crop Project Coordinators be requested to submit a list of varieties to the Secretariat of the Central Sub Committee on Crop Standards, Notification and Release of Varieties indicating the National, Regional, Zonal and State checks. The list would be up-dated every year.

(iii) The concerned Project Coordinators are being requested now to participate in the Meeting as a Special Invitee. If any Project Director/Coordinator is unable to attend the Meeting for some unavoidable reasons, he should send his comments on variety release proposals concerning his crop well in advance to the Secretariat.

(iv) Representative of the Animal Husbandry Division, Department of Agriculture and Cooperation may also be invited as a Special Invitee as and when the proposals of Forage crops are considered.

4. The decisions of the Committee on the regular Agenda Items is indicated below:—

Item No. 1: Confirmation of the Minutes of the 13th Meeting of the Central Sub Committee on Crop Standards, Notification and Release of Varieties held on 9th June, 1989.

5. The Minutes of the earlier Meeting were confirmed.

Item No. 2: Review of action taken on the Minutes of the 13th Meeting of the Central Sub Committee on Crop Standards, Notification and Release of Varieties

6. Position indicated in the Agenda Notes was noted by the Committee/Participants.

Item No. 3: Release of Varieties

7. Thirty five proposals of different varieties of various crops were considered for Release and Notification. The observations of the Central Sub Committee on Crop Standards Notification and Release of Varieties in respect of each proposal is indicated in the Table given below:

TABLE No. 1

S. No.	Crop	Variety	Remarks
1	2	3	4
1.	Anjan Grass (Buffel grass) . . .	Bundel Anjan-1	Recommended for release for cultivation in entire country.
2.	Chilli	Jawahar Mirch-218	Recommended for release for following areas: *A. In Madhya pradesh:* (i) Nimar valley region including Khandwa and Khargone. (ii) Parts of Malva Plateau including Indore and Mandsaur. (iii) Part of Kymore plateau including Jabalpur Division. (iv) Parts of North hill region including Ambikapur. *B. In other parts of India :* (i) Parts of north India including Hissar, Kalianpur, Srinagar and Sabour.

1	2	3	4
			(ii) Parts of Maharashtra including Rahuri, Akola, Dapoli and Ambajogai.
3.	Cowpea (Fodder) UPC-287 Already notified vide S.O. No. 471(E) dt. 5-5-88.		Recommended for release for cultivation in all Cowpea growing areas of the country.
4.	Dinanath grass	Bundel Dinanath-2	Recommended for release for cultivation in the entire country except Southern Zone.
5.	Groundnut	ICGS-76	Recommended for release for cultivation in rainy season, Zone V Southern Maharashtra, Andhra Pradesh (except North coastal districts), Tamilnadu, Karnataka and Kerala.
6.	Horsegram	Maru Kulthi-I	Recommended for release for cultivation in dry land of Western Rajasthan, its adjoining Districts & Mahrashtra.
7.	Moth bean	Moth-880	Recommended for release for cultivation in West Zone specially Moth growing areas of Rajasthan State and adjoining areas.
8.	Oats	Bundel Jai-882	Recommended for release for cultivation in Southern U.P. and M.P.
9.	Onion	Pusa Madhvi	Recommended for release for cultivation all over India during Rabi season.
10.	Garden Pea	VL Matar-3	Recommended for release for cultivation in North Western Hills in Zone-I specially the States of Himachal Pradesh and J&K, UP Plains and South Bihar in Zone-IV and Haryana in Zone-VI.
11.	Garden Pea	Pant Matar-2	Recommended for release for cultivation in Zone-I (Humid Western Himalayan region) Zone IV (Sub-humid Sutlej Ganga Alluvial plains).
12.	Paddy	Pusa Basmati-I (IET-10364)	Recommended for release for cultivation in Punjab, Haryana and Western U.P.
13.	Paddy	Kasturi (IET-8580)	Recommended for release for cultivation in the traditional basmati growing areas of North and North Western India comprising of States of Punjab, Haryana, Uttar Pradesh, Rajasthan and Delhi, Mainly in Districts such as Karnal and Ambala in Haryana, Gurdaspur, Pathankot and Amritsar Districts in Punjab; Kota District in Rajasthan; Dehradun, Saharanpur, Pilibhit and Pantnagar Districts in Uttar Pradesh and Delhi.
14.	Paddy	Pranava (IET-7999)	Recommended for release for cultivation in Andhra Pradesh, Tamilnadu and Bihar.
15.	Paddy	CSR-10 (IET-10349/10694)	Recommended for release for cultivation across the Zones, for mostly the salt affected soils of U.P., Haryana Punjab, Gujarat, Orissa, Maharashtra and Karnataka.
16.	Paddy	Amulya (IET 8989)	Recommended for release for cultivation in the semi-deepwater (50-100 cm) areas in the States of West Bengal, Uttar Pradesh, Bihar and Tripura.
17.	Paddy	Nalini (IET 8987)	Recommended for release for cultivation in the semit deep water (50-100 cm) areas in the States of West Bengal, Uttar Pradesh, Bihar and Tripura.
18.	Rajmash	Malviya Rajmash-15	Recommended for release for cultivation in NEPZ where night temperature does not go below 6°C.
19.	Soyabean	VL Soya-2	Recommended for release for cultivation in Northern Hill Zone.
20.	Wheat (T. *aestivum*)	Mangla	Recommended for release for cultivation in High fertility, irrigated timely sown conditions of Central and South Eastern Zones.
21.	Wheat (T. *aestivum*)	Raj-3077	Recommended for release for cultivation in timely sown high fertility and irrigated conditions in NWPZ. Also recommended under late sown, high fertility and irrigated conditions of NWPZ (Haryana, Gujarat and Rajasthan).
22.	Cotton (Hybrid)	HB-224	Recommended for release for cultivation in Southern States of Tamil Nadu, A.P. and Karnataka.

The details regarding important features of the above varieties are in Annexure-II.

8. Details of the varieties to be recommended for Release and Notification after receipt of the detailed analytical report from Project Coordinator:

TABLE No. 2

S. No.	Crop	Variety	Remarks
1	2	3	4
1.	Groundnut	ICGV 87119 (ICGS-1)	Project Coordinator would furnish a comparative statement indicating the following; (i) The performance of both the varieties in Zone- during 1981 to 1984. (ii) Their performance against best local check during four years of testing. (iii) Detailed data on the reaction to the pests and diseases. (iv) Data on oil content. (v) Comments indicating the superiority of one variety over the other.
2.	Groundnut	ICGV 87121 (ICGS-5)	
3.	Groundnut	ICGV-87157 (ICG-FDRS-4)	The project Coordinator would submit a comparative statement indicating superiority of one variety over the other besides the comparative statement giving details on the following :— (i) Pod yield; (ii) 1,000 seed weight; (iii) Earliness; (iv) Shelling percentage; (v) Oil contents; (vi) Reaction to the diseases and pests; (vii) Information on Agronomic trials.
4.	Groundnut	ICGV 87160 (ICG-FDRS-10)	

9. The Committee authorised the Chairman to take decision with regard to release and notification of the above Groundnut varieties after receipt of the desired information from Project Coordinator along with decision of the Chairman would also be made available to the members of the Committee in the next Meeting.

10. Detail of the varieties/Proposals which were deferred for the next Meeting or sponsoring authorities were requested to resubmit the proposals along with desired informations or to the State Seed Sub Committee:

TABLE No. 3

S. No.	Crop	Variety	Remarks
1	2	3	4
1.	**Brinjal**	Kt-4 (Pusa Anupam)	The proposal might be resubmitted along with detailed data on various attributes in a prescribed proforma.
2.	**Bajra**	VBH-4	The proposal might be resubmitted along with following informations/clarifications :— (i) Detail data on its agronomic superiority; (ii) Its performance vis-a-vis HHB-60; and (iii) Reasons for recommending only for two States namely Maharashtra and Haryana especially when superiority was not established over check during 88-89 in Haryana.
3.	**Cow Pea (Fodder)** . . .	UPC 4200	The proposal might be resubmitted along with following information :— (i) detailed data on agronomic trials; (ii) reaction to diseases and pests.
4.	**Paddy**	IET 6666 (Lakhimi)	The variety is meant for release only for Assam and hence sponsoring authority was advised to resubmit the proposal to the Assam State Seed Sub Committee. After its release in Assam, the proposal could be submitted to Central Sub Committee on Crop Standards, Notification and Release of Varieties for notification in specified proforma.

1	2	3	4
5.	Wheat	Raj 2535	The variety is meant for release only for Gujarat and hence sponsoring authority was advised to submit the proposal to the Gujarat State Seed Sub-Committee after its release in Gujarat, the proposal could be submitted to Central Sub Committee on Crop Standards, Notification and Release of Varieties for notification in specified proforma.
6.	Maize	Composite R-2	The variety is meant for release only for Uttar Pradesh and hence sponsoring authority was advised to submit the proposal to the Uttar Pradesh State Seed Sub Committee. After its release in UP the proposal could be submitted for Central Sub Committee on Crop Standards, Notification and Release of Varieties for notification in specified proforma.
7.	Finger Millet	OUAT-2 (Vakti)	Deferred for the next Meeting.

11. The details of the varieties which were not recommended for release is as under:

TABLE No. 4

S. No.	Crop	Variety	Remarks
1.	Groundnut	M-335	The data did not substantiate the claimed earliness.
2.	Gram	ICCC-32	The variety has no distinct superiority over L-550. Incidence of higher percentage of wilt was recorded at Hissar as much as 100%.

Item No. 4 : Notification

12. *Twenty* one proposals of different crops/varieties were considered for notification under Section 5 of the seeds Act. The recommendations of the Committee is indicated in the following Table:

TABLE No. 5

13. Detail of varieties recommended for Notification for entire country :

S. No.	Crop	Variety
1.	Cotton	MCU-11
2.	Groundnut	ALR-1
3.	Groundnut	VRI-2
4.	Bajra × Napier hybrid	Yeshwant (RBN-9)
5.	Cowpea (Forage)	Shweta (No. 9998)
6.	Paddy	Rajshree (TCA 80-4) IET 7970.
7.	Paddy	Sudha TCA-72. IET 8977.
8.	Paddy	Kanak (IET 1009)
9.	Paddy	ASD-17
10.	Paddy	MDU-3
11.	Sesamum	E-8
12.	Indian bean	CO-11
13.	Greengram	Vamban-1
14.	Sorghum	K-8

14. The detail regarding important features of above varieties is given in Annexure III.

15. Detail of the Vegetable varieties which would be recommended after receipt of the report of the Project Coordinator (Vegetable) is as under:

TABLE No. 6

S. No.	Crop	Variety
1.	Beans	TKD-1
2.	Bhindi	Co. 2
3.	Brinjal	Co. 2
4.	Tomato	Paiyur-1

16. The Committee suggested that Project Director (Vegetable Crops) might submit a report on the performance of above varieties after field visit. The Chairman will decide the notification after receipt of report. At the same time, sponsoring authority would ensure that seed sample of these Varieties in required quantity were submitted to the Project Director (Veg. Crops) for testing under coordinated trials.

17. The detail of varieties which could not be recommended for notification for want of results/data of coordinated trials is as under:—

TABLE No. 7

S. No.	Crop	Variety
1.	Buffel Grass	CO-1
2.	Maize	COH-2

18. The sponsoring authorities were advised to re-submit 100 copies of the proposal along with desired information.

19. Details of varieties wherein sponsoring authorities were requested to submit the proposal through State Seed Sub Committee are as under:

TABLE No. 8

S. No.	Crop	Variety
1.	Soy-bean	JS 76-205

Item No. 5: Specification of minimum limits of germination purity and particulars of mark/label.

20. The item was deferred for the next Meeting.

Miscellaneous Item

21. During 5th, 6th and 8th Meetings, the Committee authorised the Chairman to decide the notification of various varieties after receipt of views of Project Coordinator, the report of the Project Coordinator was received and Chairman approved the Notification of the following varieties:

TABLE No. 9

S. No.	Crop	Variety
1.	Onion	No. 780 Baswant
2.	Tomato	ATV-1
3.	Tomato	ATH-1
4.	Tomato	Sonali (Selection-2)
5.	Brinjal	Aruna
6.	Cucumber	Sheetal
7.	Wal	Deepali
8.	Wal	Dasara

22. The important morphological characters are given in Annexure IV.

23. The Meeting ended with a vote of thanks to the Chair.

ANNEXURE I

List of participants who attended the 14th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held at 2 P.M. on 1st September, 1989 under the Chairmanship of DDG (CS) ICAR, Krishi Bhavan, New Delhi

1. Dr. R.S. Paroda, *Chairman*
   Deputy Director General (CS)
   Indian Council of Agril. Research,
   Krishi Bhavan, New Delhi.
2. Shri B.M. Sharma,
   Director (CP), TMO,
   Ministry of Agriculture,
   Government of India, Krishi Bhavan,
   New Delhi.
3. Shri Randhir Singh,
   Vill. & P.O. Matarshyam,
   Distt. Hissar, Haryana.
4. Shri K.M. Hooda,
   375/16, Hari Niwas, Jhajjar Road,
   Rohtak, Haryana.
5. Shri Ramsagar Upadhyay,
   Vill. & P.O. Rajatalab, Varanasi, (U.P.).
6. Dr. K.R. Chopra,
   Director, Research & Production,
   Mahendra Hybrid Seed Co.,
   Post Box. No. 52, Jalna. (Maharashtra).
7. Shri R.S. Arora,
   Director,
   Century Seeds Pvt. Ltd., M-1,
   Anupam Bhavan, Azadpur, Delhi-110 033.
8. Dr. N.P. Nema,
   General Manager, (RD&QC)
   National Seeds Corporation,
   Beej Bhavan, Pusa Complex,
   New Delhi.
9. Shri S.V. Jain,
   Additional Director of Agriculture
   (Research) Department of Agriculture,
   Jaipur, Rajasthan.
10. Shri T. Thanikachalam,
    Joint Director of Agriculture,
    (State Seed Farm)
    Directorate of Agriculture,
    Madras-5, Tamil Nadu.
11. Dr. Shyam Singh,
    Director of Agriculture,
    Administration, Port Blair.
12. Shri B.S. Gill,
    Joint Director of Agriculture,
    Government of Punjab, Chandigarh.
13. Shri Rampal Malik,
    Joint Director of Agriculture,
    Chandigarh, Haryana.
14. Dr. S. Sahay,
    Joint Director of Agriculture,
    Patna, Bihar
15. Shri D.P. Singh,
    Deputy Director of Agriculture,
    Patna, Bihar.
16. Shri B.U. Modi,
    Director,
    Gujarat State Seed Certification Agency,
    Ahmedabad.
17. Shri Prem Singh Gill,
    Director,
    Punjab State Seed Certification
    Authority, Chandigarh.
18. Shri Mohd Sathruddin,
    Director, Seed Certification Deptt.,
    Coimbatore, Tamilnadu.
19. Shri Basudeo Ram,
    Seed Certification Officer,
    Bihar State Seed Certification Agency,
    Patna.
20. Shri A. Narayana Swamy,
    Joint Director, Karnataka State Seed
    Certification Agency, Bangalore.
21. Shri S.K. Sindhwani,
    Director,
    Haryana State Seed Certification Agency,
    Chandigarh.
22. Dr. P.K. Agarwal,
    Head, Division of Seed Science &
    Technology,
    Indian Agricultural Research Institute,
    New Delhi-110 012.
23. Dr. P.S. Bhatnagar,
    Director,
    National Research Centre for Soybean,
    Indore.
24. Shri A.K. Basu,
    Director,
    Central Institute for Cotton Research,
    P.B. No. 125, Nagpur.
25. Shri K. Mohan Naidu,
    Director, Sugarcane Breeding Institute,
    Coimbatore, Tamil Nadu.
26. Dr. J.P. Tandon,
    Project Director (Wheat) IARI,
    New Delhi.
27. Dr. S.M. Sharma,
    Project Coordinator (Sesamum & Niger)
    Jabalpur.
28. Dr. M.S. Basu,
    Project Coordinator (Groundnut) National
    Research Centre for Groundnut, Junagarh.
29. Dr. S. Lal,
    Project Director,
    Directorate of Pulses Research, Kanpur.
30. Dr. C.R. Hazara,
    Project Coordinator (Forage Crops),
    I.G. F.R.I., Jhansi.
31. Shri E.A. Sidding,
    Project Director, DRR, Hyderabad.
32. Dr. S.B. Singh,
    Senior Scientist, Maize Project,
    IARI, New Delhi.
33. Dr. Mangla Rai,
    Assistant Director General (Seeds), ICAR,
    New Delhi.
34. Shri N.S. Tunwar,
    Deputy Commissioner (QC),
    Deptt. of Agri. & Coopn. Ministry of
    Agriculture, New Delhi.
35. Shri M.S. Shukla,
    Deputy Seed Officer (QC),
    New Delhi.
36. Shri D.S. Mishra,
    STA (Seeds), New Delhi.

ANNEXURE II

The details of important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its Fourteenth Meeting held on 1st September, 1989

1. Crop : Anjan Grass (*Cenchrus ciliaris*)

Name of the variety : Bundel Anjan-1

Sponsored by : Indian Grassland & Fodder Research Institute, Jhansi (U.P.).

Parentage with details of its pedigree : Developed from the indigenous material from Coimbatore IG-69-3108.

Recommended ecology : Suitable for arid & semi-arid condition.

Description of the variety :

(a) Plant height : 130-145 cm.

(b) Distinguished morphological characters : Semi-erect growth habit. Thick stemmed medium late maturing, high tillering large compact spike, purple pigmented nodes, droopy long and broad leaves.

(c) Maturity : 90-110 days after planting

(d) Maturity group : Medium Late.

(e) Reaction to major diseases : Variety has been observed to be free from all major diseases.

(f) Reaction to major pests : Resistant to all major insects/pests except minor incidence of grass-hoppers in early stages.

(g) Agronomic features : Drought and frost hardy, moderate resistance to lodging, high fertilizer responsiveness, high tillering and regeneration ability, perennial nature it remains productive for 4-5 years under proper management conditions, seed rate 4-5 Kg/ha.

(h) Reaction to stresses : Drought hardy and cold tolerant.

Average yield under normal conditions : The average drymatter yield of this variety is 10900 Kg/ha.

Agency responsible for maintaining breeder's seed : IGFRI Jhansi.

Specific recommendations if any for seed production : Since it is an apomictic crop isolation is not required for its seed production. However, seed production can be increased by adding phosphatic fertilizer and with only one cutting at pre-flowering stage.

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2. Crop : Chilli (*Capsium annuum* L.)

Name of the variety : Jawahar Mirch 218

Sponsored by : Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Pin-482 004 (M.P)

Parentage with details of its pedigree : The chilli variety J 218 was developed from the cross made between the two varieties Kalipeeth (Locally adopted variety of Khandwa) × Pusa Jwala (Improved variety). During 1975-76 at the department of vegetable crops and floriculture JNKVV, Jabalpur. Large number of progeny were selected in segregating population (F_2) and finally progeny No. 218 was retained for high yield quality and other characters.

Recommended ecology : Soil & Climate : The crop should be grown on well drained and well aerated sandy loam soil or medium black soil.

Description of variety :

(a) Plant height : 45-50 cm.

(b) Distinguishing morphological characters : Plant of J 218 is dwarf, vigorous and spreading with 8-12 primary branches having 900-1000 medium large (leaf area index 3.45), Thick light green leaves profusely bearing with erect fruiting habit. Fruits long (10-12 cm.) and thin (2.5 to 3.0 cm girth). Unripe fruits are light green with a purplish tinge (some times absent). Ripe fruits are bright and glossy, each fruit containing 50-70 seeds.

(c) Maturity The first picking of green chilli can be done in 100-105 days after seed sowing and that of red ripe fruits in 120 to 125 days.

(d) Maturity group : J 218 is early maturing variety, first picking of red ripe chilli can be done in 120-125 days after seed sowing.

(e) Reaction to major diseases The variety J 218 has sown fairly good degree of tolerance to leaf curl and anthracnose diseases under field conditions as compared to check varieties NP 46 'A' and Pusa Jwala.

(f) Reactions to major pests : As regards to Thrips and mites which are the major pests of chilli, the variety J 218 has shown less susceptability (2.94%) under field conditions as against 3.64% susceptability in NP 46 'A' (Check).

(g) Reaction to stresses : The variety J 218 can be grown successfully under rainfed conditions in light soils. This variety has given good performance under moisture stress. conditions resulted due to dry spell.

Average yield under normal conditions : The average yield under normal conditions has been recorded as
(a) Red ripe fresh chilli 85-97 q/ha.
(b) Red ripe dry chilli-18-122 q/ha.

Agency responsible for maintaining breeder's seed : Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur.

Specific recommendations if any, for seed production : Isolation distance should be kept more than 400 meters.

3. Crop : Cowpea (*Vigna unguiculata* L.) Walp.

Name of the variety : UPC 287

Note : Please see at Serial No. 1, Annexure III of the Proceedings of the 10th Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

4. Crop : Dinanath Grass (*Pennisetum Pedicellatum*)

Name of the variety : Bundel Dinanath-2.

Sponsored by : Indian Grassland & Fodder Research Institute, Jhansi (U.P.)

Parentage with details of its pedigree : Mutant progeny of exotic material, pedigree 3808-4-2-1.

Recommended ecology : The optimum temperature for its maximum growth is between 15°C and 35°C.

Description of the variety :

(a) Plant Height : 175-200 cm.

(b) Distinguished morphological characters : Eearly maturing, thin stemmed medium size spike, medium size densely located spikelets with medium long, bristles, medium hairness on the ventral surface of leaves.

(c) Maturity : (i) Days to flowering 80-85 days.
(ii) Days to maturity (Seed to Seed) 125-130 days.

(d) Maturity group : Early

(e) Reaction to major diseases : The variety possesses considerably high tolerance to leaf spot, *Helminthosporium* and other major diseases.

(f) Reaction to major pests : It has fairly high resistance to major insect pests.

(g) Agronomic features : (i) Resistance to lodging
(ii) Drought hardy

(h) Reaction to stresses : Drought tolerant

Average yield under normal conditions : (i) Green fodder yield 35870 kg/ha.
(ii) Dry matter yield 9150 kg/ha.
(iii) Seed yield : 200 kg/ha.

Agency responsible for maintaining breeder's seed : IGFRI, Jhansi.

5. Crop : Groundnut (*Arachis hypogaea* L.)

Name of the Variety : ICGS 76 (ICGV 87141)

Sponsored by : ICRISAT, Patancheru P.O. 502 324, Andhra Pradesh.

Parentage with details of its pedigree : (TMV 10×Chico) F_2-B_2--NIB_1-B_1-B_1-B_1-B_1-B_1-B_1-B_1-B_1-B_1

Recommended ecology : Rainfed situation.

Description of the variety :

(a) Plant height and breadth : 17.5 cm, 39.1 cm (postrainy season, 1987-88, ICRISAT Center).

(b) Distinguishing morphological characters:

Cultivar group : Virginia
(i) Growth habit : Decumbent 3
(ii) Branching pattern : Alternate

(iii) Plant height and breadth	:	17.5 cm, 39.1 cm (Post rainy season 1987-88, ICRISAT Center)
(iv) Pigmentation	:	Green
(v) Number of primary and secondary branches	:	4-6, 4-7
(vi) Leaf characters :		
(a) Size	:	Medium-small
(b) Shape	:	Elliptic
(c) Colour	:	Dark green
(vii) Flower Colour :		
(a) Standard	:	Orange
(b) Cresent	:	Yellow
(c) Cresent marking	:	Garnet
(d) Wing petal	:	Yellow
(viii) Pod and seed characters :		
(a) Pod beak	:	Slight moderate
(b) Pod construction	:	Slight-moderate
(c) Pod reticulation	:	Moderate-prominent
(d) Pod Ridge	:	Absent
(e) Seeds per pod	:	2-1-3 (occasional)
(f) Pod length	:	29 m m (average of 20 two-seeded pods, rainy season 1988, ICRISAT Center).
(g) Pod breadth	:	13 mm (Average of 20 two-seeded pods, rainy season 1988, ICRISAT Center)
(h) Shelling (%)	:	72.7 (69.6-78.0)
(i) Seed length	:	14mm (Average of 20 seeds, rainy season, 1988, ICRISAT Center).
(j) Seed breadth	:	8mm (Average of 20 seeds, rainy season, 1988, ICRISAT Center).
(k) 100-seed mass	:	44 g
(l) Seed colour	:	Tan
(c) Maturity	:	122 days (118-132 days)
(d) Maturity group	:	Medium
(e) Reaction to major diseases	:	At par or better than control varieties.
(f) Reaction to major pests	:	At par or better than control varieties.
(g) Agronomic features :		
(i) Drought	:	Good recovery for pod yield from mid-season drought.
(ii) Reaction to stresses	:	Good pod yield recovery from mid-season drought.
(iii) Plant population	:	222,000 plants ha^{-1}
(h) Quality of produce of grain forage/fibre including nutritive value, where relevant		
(i) Oil (%)	:	ICGS 76 : 42.5 (39.7-44.9) Kadiri 3 : 43.0 (40.3-46.5)
(ii) Protein (%)	:	ICGS 76 : 20.0 (rainy season 1987, ICRISAT Center).
(iii) Shelling (%)	:	ICGS 76 : 72.7 (69.6-78.0) Kadiri 3 : 70.3 (67.0-74.0) C 198 : 68.2 (65.0-72.0)
Average yield under normal conditions	:	2500-3500.kg./ha.
Agency responsible for maintaining breeder's seed	:	ICRISAT, Patancheru P.O., 502 324, Andhra Pradesh.
Specific recommendations, if any, for seed production	:	It is preferable to select a field which was not under groundnut cultivation for atleast 2 years.

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6. Crop	:	Horsegram or Kulthi (*Mycrotyloma uniflorum*) (Lam Verdec) Syn. Dolichos biflorus.
Name of the variety	:	Maru-Kulthi-1 (PL selection)
Sponsored by	:	Central Arid Zone Research Institute, (ICAR), Jodhpur, Rajasthan.
Parentage with details or its pedigree	:	Selections of plants from germplasm entry collected from Pali-Marwar region.
Recommended ecology:	:	Dryland of western Rajasthan and its adjoining districts.
Description of variety :		
(a) Plant height	:	Mean height over locaitonis 63·3 cm

(b) Distinguishing morphological characters : The variety has less vegetative growth and semi-spreading in nature. The leaves are light green in colour. The seeds are medium bold in size and light brown in colour.

(c) **Maturity** :

(i) Seeding to Flowering : (Mean-48.8) (Range 32-97 days) over locations.

(ii) Seed to seed : Mean-93 days (20 locations over 4 years) Range 69-161.

(d) Maturity group : Not applicable.

(e) Reaction to major diseases : No serious disease attack is observed in the crop under field conditions.

(f) Reaction to major pests : No serious insect-pest attack is observed on the crop under field condition. In store also it is not attacked by any storage pest.

(g) Quality of produce of grain, forage : It is capable of giving about 3 t/ha forage yield under good monsoon season and about 1 t/ha forage yield under drought situations.

(h) Reaction to stresses : The variety 'PL-Selection' is drought resistant giving higher yield as compared to other varieties and local.

Average yield under normal conditions : 700 kg/ha.

Agency responsible for maintaining breeder's seed : Central Arid Zone Research Institute (CAZRI), Jodhpur.

7. Crop : Mothbean (*Vigna aconitifolia* (Jacq) Marechal.)

Name of the variety : Moth 880

Sponsored by : Moth Breeder, Agricultural Research Station, Rajasthan **Agricultural** University, Mandor, Jodhpur (Rajasthan).

Parentage with details of pedigree : Local Mothbean seed of village Bhojpura, Jhunjhunu (Distt.) Rajasthan

Recommended ecology : The proposed variety is identified for west zone of the country Occurance of severe drought in western Rajasthan & adjoining states is a recurring feature. The average annual rainfall of the area is 100 to 370 mm. The total rainfall received in service area is barely adequate to grow the crop. its erratic distribution makes it to evolve varieties which would make best use of the available precipitation. Crop is generally raised in quite adverse ecological conditions.

Description of the variety :

(a) Plant height :

(i) Mean (cm) : 30 cm.

(ii) Range over locations : 20-45 cm.

(b) Distinguishing morphological characters : It has long peduncle 5-10 cm with shallow incissioned leaves. Compasratively leaves are smaller in size.

(c) Maturity :

(i) Mean (days) : 95 days

(ii) Range over locations : 90-100

(d) Maturity group : Early maturing group.

(e) Reaction to major diseases : Moderately resistant to yellow Mosaic Virus under field conditions with score of 5.63 white flies/plant against 29.30 white flies/plant on Jadia check.

Average yield under normal conditions : 452 kg./ha.

Agency responsible for maintaining breeder seed : Moth Breeder, A.R.S. Mandor, Jodhpur.

8. Crop : Oats (*Avena sativa* L.)

Name of the variety : "BUNDEL JAI-882"

Sponsored by : Indian Grassland and Fodder Research Institute, Jhansi-284003 (Uttar Pradesh).

Parentage with details of its pedigree : (IGO 4268 × Indio)--6-5-1

Recommended ecology : Central zone of the country.

Description of the variety:

(a) Plant height : 100-110 cm.

(b) Distinguishing morphological characters : (i) Lemma colour : Cream

(ii) Lema hairiness : non hairy

(iii) Awns: usually absent but some florets may have weak awns.

(iv) Non-shattering
(v) Erect growth habit
(vi) Panicle : equilateral and loose

(c) Maturity :
  (i) Seeding to flowering : 95-100 days
  (ii) Seeding to maturity : 125-130 days
(d) Maturity group : Medium
(e) Reaction to major diseases : The variety possesses high field resistance to all major diseases.
(f) Reaction to major pests : It has high resistance to all major insect pests. It also possesses resistance to all stored grain pests.
(g) Reaction to stresses : Being multicut type, not suitable for stress conditions.
Average yield under normal conditions : 375 q. green fodder and 85 q. dry matter per hectare.
Agency responsible for maintaining breeder seed : Indian Grassland and Fodder Research Institute, Jhansi.

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9. Crop : Onion (*Allium cepa* L.)
Name of the variety : Pusa Madhvi
Sponsored by : Indian Agricultural Research Institute, New Delhi-110012.
Parentage with details of its pedigree : A collection was made from Kairana Distt. Muzaffarnagar, U.P. The collection was purified and selection was made.
Recommended ecology : Suitable for growing in Humid Western Hills of Himalayan Region, Sub-humid Sutlej Ganga alluvial plains, Arid Western plains and semi-arid Lava Plateau and Central High lands regions of India.

Description of the variety :

(a) Plant height : About 65 cm.
(b) Distinguishing morphological characters : Bulbs light red and attractive, roundish flat shape medium to large sized bulbs.
(c) Maturity : 130-135 days after transplanting
(d) Maturity group : It comes under early to medium maturity.
Average yield under normal conditions : 30,000 kg/ha.
Agency responsible for maintaining breeder seed : Division of Vegetable Crops, Indian Agricultural Research Institute, New Delhi.

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10. Crop : Garden Pea (*Pisum sativum*)
Name of the variety : VL Matar 3
Sponsored by : Director,
Vivekananda Parvatiya Krishi Anusandhan Shala (ICAR)
Almora-263 601, Uttar Pradesh
Parentage with details of its pedigree : (Old Sugar × Wrinkled dwarf)
Recommended ecology : Recommended for irrigated conditions during Rabi in Hills as well as in plains.

Description of the variety :

(a) Plant height : 76 cms.
(b) Distinguishing morphological characters : Plants have determinate growth habit with light green foliage and white flowers. The number of Pods per peduncle is two and first set of pods is set at 10th node. The pod is light green in colour, straight with average length of 6.8 cm.
(c) Maturity : Seeding to first picking days in hills are about 140 and in plains about 100 days.
(d) Maturity group : Medium maturity Mid season.
(e) Reaction to major diseases : VL 3 has shown less incidence of powdery mildew and Alternaria blight under natural conditions than the released and identified varieties. Under artificial conditions powdery mildew incidence was similar to some varieties and better than Bonneville and Lincoln.

(f) Reactions to major pests : The incidence of leaf minor and pod borer in VL 3 was similer to that in released and identified varieties.

(g) Reaction to stresses : In physiological studies conducted at VPKAS, Almora VL 3 has shown very good tolerance to cold special at germination stage. At a soil temperature ranging from 3-5° C it germinated in 25 days while Lincoln and Sel 82 took 49 and 37 days respectively, and has given more grain yield under rainfed conditions in comparison to other varieties, the per plant dry grain yield of VL 3 under rainfed condition 8.3 gm, in comparison 6.4 gm of JM 1, 6.6 gm IP 3, 7.0 gm of Lincoln, 6.9 gm of Sel 82 and 8.3 gm of Bonneville.

Average yield under normal conditions : 100 q/ha.

Agency responsible for maintaining breeder seed : Vivekananda Parvatiya Krishi Anusandhan Shala, Almora.

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11. Crop : Veg. Pea (*Pisum sativum*)

Name of the variety : Pant Matar-2

Sponsored by : G.B. Pant University of Agricultural & Technology, Pantnagar.

Parentage with details of its pedigi : Early Badger × IP-3.

Recommended ecology : Winter season in plains and summer/winter in hills.

Description of the variety :

(a) Plant height : 50-60 cm.

(b) Distinguishing morphological characters : Seed colour is whitish green in PN-2 while in Arkel it is green. Pods of PH-2 are more curved in comparison to Arkel. Number of leaflets is usually three in case of PM-2 while it is 2-3 in Arkel. The leaflets are smaller in size in PM-2 than Arkel. Thus, PM-2 is distinguishable from Arkel.

(c) Maturity : 55-60 days for Ist green pod picking

(d) Maturity group : Early

(e) Reaction to major diseases : PM-2 is susceptible to powdery mildew like the check Arkel, but escapes due to earliness.

(f) Reaction to major pests : No specific resistance against any major pest has been observed. Thus it is at par with the check i.e. Arkel.

Average yield under normal conditions : 9200 kg. (green pod)

Agency responsible for maintaining breeder seed : G.B.P.U.A. & T. Pantnagar.

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12. Crop : Paddy (*Oryza sativa* L.)

Name of the variety : Pusa Basmati-1

Sponsored by : Head, Division of Genetics,
Indian Agricultural Research Institute, New Delhi-110012.

Parentage with details of its pedigree : IET 10364 is from the cross Pusa 150/Karnal Local

Recommended ecology : Irrigated (Transplanted)

Description of the variety :

(a) Plant height : Semidwarf 85-95 cms.

(b) Distinguishing morphological characters : Semi dwarf, stiff and medium tillering, nonlodging, short narrow leaves long panicle, long superfine aromatic grain with straw colour hull, grain distinctly awned, white kernel with ideal basmati characteristic.

(c) Maturity :

Seeding to 50% flowering : 100 days

Seed to seed : 135 days

(d) Maturity group : Medium

(e) Reaction to major diseases : Same as of Basmati 370

(f) Reactions to major pests : Same as of Basmati 370

(g) Reaction to stresses : Same as Basmati 370

Average yield under normal conditions : 4500 kg/ha.

Agency responsible for maintaining breeder seed : Indian Agricultual Research Institute, New Delhi-110 012.

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13. Crop : Paddy

Name of the variety : Kasturi (IET 8580)

Sponsored by	Directorate of Rice Research, Rajendranagar, Hyderabad-500 030.
Parentage with details of its pedigree	Basmati 370/CRR 88-17-1-5 pedigree : RP 2144-108-5-3-2
Recommended ecology :	Irrigated areas
Description of variety	
(a) Plant height	106.7 cm.
(b) Distinguishing morphological characters	Semi-tall statured, moderate tillering, sturdy culm, non-lodging, erect flag leaf long panicles with long slender grains, straw hull, white kernel scented, all plant parts green.
(c) Maturity	Days to 50% flowering 100 days Maturity from seed to seed : 130 days
(d) Maturity group	Medium duration.
(e) Reaction to major diseases	Moderately resistant to blast
(f) Reactions to major pests	Not available
(g) Reaction to major stresses	Moderately resistant to Blast
Average yield under normal conditions	The variety recorded mean yield upto 3.0 to 3.5 t/ha under normal conditions at optimal level of fertiliser.
Agency responsible for maintaining breeder seed	Directorate of Rice Research, Rajendranagar, Hyderabad-500 030.

14. Crop	Paddy (*Oryza sativa* L.)
Name of the variety	Pranava (IET 7999)
Sponsored by	Directorate of Rice Research, Rajendranagar, Hyderabad-500 030.
Parentage with details of its pedigree	Vikram/Bulu Benong Pedigree : RP 1641-514-11-3-2 (i) Vikram, the female parent is a semi-dwarf variety belonging to indica group of *O. Sativa* L. and has resistance to gallmidge. (ii) Bulu Benong, the male parent is a tall, strong stemmed rice variety from Indonesia belonging to *Javonica* group of *O. Sativa* L.
Recommended ecology	Irrigated/rainfed lowlands, lowlying water logged areas.
Description of variety	
(a) Plant height	95 to 100 cm.
(b) Distinguishing morphological characters	Thick culm, long dense panicles, all parts green, long broad flag leaf, non-lodging and heavy tillering.
(c) Maturity	
(i) Seeding to 50% flowering	120-125 days
(ii) Seed to seed	150-155 days
(d) Maturity group	Late maturing
(e) Reaction to major diseases	Tolerant to sheath blight, blast, brown spot, bacterial leaf blight and rice tungro virus.
(f) Reaction to major pests	Moderately resistant to gallmidge and BPH at Warangal (1984) Score of 3 & 1 respectively for these two pests.
(g) Agronomic features	Resistant to lodging and shattering.
(h) Reaction to major stresses	Tolerant to water logging conditions.
Average yield under normal conditions	5.5 t/ha.
Agency responsible for maintaining breeder seed	Directorate of Rice Research, Rajendranagar, Hyderabad-500 030. Andhra Pradesh.

15. Crop	Paddy (*Oryza sativa* L.)
Name of the variety	CSR 10 (IET 10349/10694)
Sponsored by	Director, Central Soil Salinity, Research Institute, Karnal-132 001.
Parentage with details	M40-431-24-114/Jaya (i) M40-431-24-144 is the mutant derivative of variety CSR 1 (ii) Jaya is the well adaptive variety derived from cross T 141/T(N) 1
Recommended ecology	Raising nursery as per the normal raised bed procedure preferably by 2nd fortnight of May & transplanting of 40 days old seedlings. A little higher dose of N (150 kg/ha) and highly deteriorated sodic soils, application of $ZnSO_4$ @ 25 kg/ha is recommended.

Description of variety :

(a) Plant height	:	Dwarf type (80-85 cm).
(b) Distinguishing morphological characters	:	
(i) Tillering	:	Good tillering (20-25 tillers/plant) under normal conditions. Medium tillering (10-19) tillers.
(ii) Lodging or culm strength	:	Strong culm (non lodging type)
(iii) Panicle exsertion	:	Well exserted
(iv) Panicle threshability	:	Intermediate type (non-shattering)
(v) Spikelet sterility	:	Highly fertile under normal condition, white tip sterility is noticed under high salt stress.
(vi) Phenotypic acceptability	:	Excellent under highly deteriorated salt affected soils.
(vii) Grain yield	:	Grain yield ranged from 5-6 tonnes/ha under normal soil conditions. Average grain yield on large plot basis recorded 5.4 t/ha under normal soil in station trials. Under highly deteriorated soils the grain yield ranged from 3.5—4·5 t/ha.
(viii) Disease/insect pest incidence	:	No major disease/insect pest caused the severe damage under natural conditions in station trials. However, no tests were carried out.
(ix) Salt Injury	:	Growth nearly normal but there is some reduction in tillering and some leaves discoloured or tip burning and rolling.
(x) Panicle type	:	Compact & Droopy
(xi) Awning	:	Absent
(xii) Stigma colour	:	White
(xiii) Brown rice (a) Length	:	Short type (5.50 mm)
(b) Shape	:	Bold (L/B ratio 2.0)
(xiv) Seed coat (bran) colour	:	White
(c) Maturity	:	
(i) Seedling to 50% flowering	:	90-95 days
(ii) Seed to seed	:	115-120 days
(d) Maturity group	:	Medium group
(e) Reaction to major diseases	:	Under field conditions neither any major disease/insect pest were reported from any station of the trial nor observed at our station trial, however, no such tests were carried out under artificial/controlled conditions.
Average yield under normal conditions	:	Average grain yield on large plot basis were recorded 5.4 to 6.1 t/ha under normal soil conditions in station trials of different years.
Agency responsible for maintaining breeder seed	:	Director, CSSRI, Karnal-132 001.

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16. Crop	:	Paddy
Name of the variety	:	Amulya (IET 8989)
Sponsored by	:	Rice Research Station, Chinsurah, Hooghly-712 102.
Parentage with details of its pedigree	:	Pure line selection from a local tall indica cultivar "Nagani'
Recommended ecology	:	Semi-deepwater (50-100 cm) areas.
Description of variety :		
(a) Plant height	:	Tall—165 to 180 cm depending on water depth.
(b) Distinguishing morphological characters	:	Tall, stiff straw, long flag leaf, high tillering ability, exsertion (6.8 cm), long compact panicle (25 cm) accommodating about 215 long slender grains Apiculus pigmented, kernel white, translucent. 1000 grain weight 24.0 g
(c) Maturity	:	Photoperiod sensitive, flowers around 26-28 October. Mid June sown crop takes a total duration (seed to seed) of about 165 days.
(d) Maturity group	:	Late
(e) Reaction to major diseases	:	Moderately resistant to Blast, resistant to sheath blight, resistant to RTV moderately resistant to Bacterial leaf blight.
(f) Reactions to major pests	:	Moderately resistant to stem borer.
(g) Reaction to stresses	:	Can withstand water stagnation. Drought tolerant at early vegetative phase.
Average yield under normal conditions	:	3253 kg/ha (average of 4 locations during 1983). 3080 kg/ha (average of 8 locations during 1984). 3300 kg/ha (average of 13 locations during 1985).
Agency responsible for maintaining breeder seed	:	Rice Research Station, Chinsurah, Hooghly, West Bengal-712 102.

17. Crop : Paddy

Name of the variety : Nalini (IET 8987)

Sponsored by : Rice Research Station, Chinsurah, Hooghly, West Bengal

Parentage with details of its pedigree : Pure line selection from a local tall indica cultivar "Sindurmukhi"

Recommended ecology : Semi-deepwater (50-100 cm) areas.

Description of variety :

(a) Plant height : Tall-160 to 175 cm depending on water depth.

(b) Distinguishing morphological characters : Tall, stiff straw, long flag leaf, high tillering ability, exsertion (6.5 cm), Compact panicle (22.0 cm) accommodating about 200 medium slender grains, apiculus pigmented, kernel white and translucent, 1000 grain weight 20.0 g.

(c) Maturity : Photoperiod sensitive, flowers around 26-28 October. Mid June sown crop takes a total duration (seed to seed) of about 165 days.

(d) Maturity group : Late

(e) Reaction to major diseases : Resistant to blast, has moderate resistance to sheath blight resistant to RTV, moderately susceptible to bacterial leaf blight.

(f) Reactions to major pests : Moderately resistant to stem Borer.

(g) Reaction to stresses : Can withstand water stagnation. Drought tolerant at early vegetative phase.

Average yield under normal conditions : 3292 kg/ha (average of 4 locations during 1983), 3090 kg/ha (average of 7 locations during 1984), 3050 kg/ha (average of 14 locations during 1985).

Agency responsible for maintaining breeder seed : Rice Research Station, Chinsurah, Hooghly, West Bengal-712 102.

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18. Crop : Rajmash (*Phaseolus vulgaris*)

Name of the variety : Malaviya Rajmash - 15

Sponsored by : Department of Genetics and Plant Breeding, Institute of Agricultural Sciences, B.H.U.

Parentage with details of its pedigree : Selection from germplasm collection from Kolta Dhar, Solan (H.P.). The variety is widely adapted as shown by its performance in All India Co-ordinated Trials and its great demand by the farmers of U.P. plains.

Description of variety :

(a) Plant height : 35-45 cm.

(b) Distinguishing morphological characters :

Days to flowering : 52
Days to maturity : 110-115
Plant height : 35.0 cm
Primary branches : 15.2
Pods/plant : 22
Seed/pod : 4.60
100-seed weight : 36.4 gms.
Seed colour : White

(c) Maturity : The crop matures in about 110 to 115 days

(d) Reaction to major diseases : No problem of disease during Rabi season for which being proposed.

(e) Reaction to major pests : No serious damage from any insect-pest has been noticed in field as well as in storage.

Average yield under normal condition : 1928 kg/ha.

Agency responsible for maintaining breeder seed : Department of Genetics and Plant Breeding. Institute of Agricultural Science, B.H.U.

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19. Crop : Soybean. (Glycine max)

Name of the variety : VL Soya-2

Sponsored by : Director, Vivekananda Parvatiya Krishi Anusandhan Shala (ICAR), Almora-263 601, Uttar Pradesh.

Parentage with details of its pedigree : Pure line selection from local collection i.e. from VHC 856 007.

Recommended ecology : Rainfed conditions of hills.

Description of variety :

(a) Plant height : 60-65 cms.

(b) Distinguishing morphological characters :
- (i) Less pubesent plant body with white hairs in comparison **Bragg.**
- (ii) Dark green and broad leaves.
- (iii) Purple violet flowers.
- (iv) Mature pods are light in colour as compared to dark brown pods of Bragg.

(c) Maturity :

Seeding to flowering : 52-55 days

Seed to seed : 117 days

(d) Maturity group : Early

(e) Reaction to major diseases : Soybean is comparatively free from major diseases. However Bacterial Pustule and cercospora leaf spot are observed. Incidence of these two diseases recorded in VL Soya-2 is low.

(f) Reactions to major pests : In hills pest problem is of minor importance to Soybean. Incidence of Hairy caterpillar and Girdle beetle has been found to be less than or at par with that of Bragg.

(g) Reaction to stresses : The variety is highly suitable for rainfed cultivation. It gives good yield even in stress condition due to high germination percentage and good plant stand.

Average yield under normal conditions : 25 to 28 quintals/hectare.

Agency responsible for maintaining breeder seed : Vivekananda Parvatiya Krishi Anusandhan Shala, Almora.

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20. Crop : Wheat (*Triticum aestivum* L.)

Name of the variety : "Mangla" (HI 1077)

Sponsored by : Director, Indian Agricultural Research Institute. New Delhi-110 012.

Parentage with details of its pedigree : Gallo-Aust-II-61-157 × Cno-No. 66-Kal 3.

Recommended ecology : Variety is best suited for irrigated, timely sown conditions of both Central & South Eastern Zone under agronomical experiment HI 1077 performed better than WH 147 and other cultivar, even under limited (1,2) as well as adequate irrigated conditions.

Description of variety :

(a) Plant height : Double Dwarf (85 to 90 cms)

(b) Distinguishing morphological characters :

(i) Early growth habit : Semi erect

(ii) Tillering capacity : Profuse tillering

(iii) Colour of foliage & stem : Dark green

(iv) Ear shape : Fusiform

(v) Ear density : Dense

(vi) Awning : Fully awned

(vii) Glume colour : Brown

(viii) Glume hairiness : Glabrous

(ix) Awn colour : Brown

(x) Fragibility of rachis : Tough

(xi) Threshability : Medium

(xii) Grain colour : Amber (lustrous)

(xiii) Grain Texture : Semi hard

(xiv) Grain size : bold

(c) **Maturity** :

Flowering : 65 to 75 days

Maturity : 120 to 130 days

(d) Maturity group : Medium late

(e) Reaction to major pests and diseases : (a) No root aphid attack was observed on HI 1077.

(b) Storage grain pest (Rice weevil) Moderately susceptible resistant to many races of black and brown rusts.

(f) Reaction to stresses : HI 1077 gave more yield under one irrigation reduction without in the grain size.

Average yield under normal conditions : 40-45 q/ha.

Agency responsible for maintaining breeder seed : IARI, Regional Station, INDORE-452 001 (M.P.)

21A. Crop : Wheat (*Triticum aestivum* L.)

Name of the variety : Raj 3077 (Timely sown condition)

Sponsored by : Wheat Specialist, Agricultural Research Station, Rajasthan Agricultural University, Durgapura, Jaipur.

Parentage with details of pedigree : HD 2267 × Raj 1482 /Raj 1802

Recommended ecology : Timely sown high fertility and irrigated conditions.

Description of variety :

(a) Plant height : 76-100 cms.

(b) Distinguishing morphological characters : Long and straight ears, dorsal surface, waxy and ventral surface nonwaxy glume colour white glabrous.

(c) Maturity : 115-120 days.

(d) Maturity group : Medium-early

(e) Reaction to major pests and diseases : Found resistant to major pests and diseases.

(f) Reaction to stresses : It performs well in stress condition.

Average yield under normal conditions : 55 q/ha.

Agency responsible for maintaining breeder seed : Wheat Specialist, Agricultural Research Station, Rajasthan Agricultural University, Durgapura, Jaipur (Rajasthan).

21B. Crop : Wheat (*Triticum aestivum* L.)

Name of the variety : Raj 3077 (Under Late sown condition)

Sponsored by : Wheat Specialist, Agricultural Research Station, Durgapura, Jaipur-15.

Parentage with details : HD 2267 × Raj 1482/ Raj 1802

Recommended ecology : Late sown, high fertility and irrigated conditions.

Description of variety :

(a) Plant height : 83-94 cms.

(b) Distinguishing morphological characters : Long straight ears, dorsal surface, waxy and ventral surface non-waxy, glume colour white glabrous.

(c) Maturity : 115-120 days.

(d) Maturity group : Medium early-Medium

(e) Reactions to major pests : No insect attack have been reported.

(f) Reaction to stresses : It performs well in stress condition.

Average yield under normal conditions : 3300 kg/ha.

Agency responsible for maintaining breeder seed : Wheat Specialist, Agricultural Research Station, Durgapura, Jaipur.

22. Crop and species : Cotton—Interspecific hybrid (*Gossypium hirsutum* × *G. Barbadense*)

Name of the hybrid : HB. 224

Sponsored by : Project Coordinator & Head, Central Institute for Cotton Research Regional Station, Coimbatore-641 003.

Parentage with details of pedigree : Female parent: LRA 5166 (a popular medium staple *hirsutum* variety derived from a three way cross)
Male parent : P. 4 (a Russian *barbadense* derivative).

Description of the hybrid :

Plant height	:	120-150 cms.
Habit	:	Medium to tall with fairly short internodes.
Monopodia	:	1—2
Leaf	:	Slightly pale green, deep cut lobes, sparcely hairy on the upper surface.
Petal colour	:	Creamy with light petal spot.
Anthers	:	Yellow
Boll shape	:	Oblong, highly pitted with a mean boll weight of 3.8 g.
Seeds	:	Medium with green fuzz; seed index of 9.5 to 10.5 with 26-28 seeds per boll.
Maturity	:	180-190 days: Earlier than DCH 32 by ten days.
Reaction to major diseases	:	(i) Fairly resistant to Alternaria, Grey mildew, susceptible to Bacterial blight. (ii) New wilt—Trials were laid out in 1986-87 at AICCIP, Lam and CICR Coimbatore. Wilt incident not noticed in any of the hybrids grown in the experiment.
Reaction to major pests	:	(i) Sucking pests: Highly tolerant to jassids and susceptible to thrips. (ii) Reaction against boll worms: on par with DCH 32.

Description of parents of the hybrid :

		Female (LRA 5166)	*Male (P4)*
(i) Plant height		120-130 cms.	100-150 cms.
(ii) Distinguishing morphological characters			
(1) Leaf	:	Light green, medium sized, hairy	Large and tough glaberous
(2) Monopodia	:	1-4	0
(3) Sympodia	:	multinoded	Typical sympodia absent Flowers in the axil of the main stem leave either singly or in clusters with long pedical.
(4) Flower	:	Cream corolla yellow anthers no petal spot	Cream corolla deep yellow anthers prominent petal spot
(5) Bolls	:	Slightly elongated bolls four loculed non pitted	Oblong, three to four loculed, deeply pitted
(6) Seeds	:	Fuzzy	naked
(7) 50 % flowering	:	60-65 days	70-75 days
(8) Maturity (days)	:	160-170	170-180
(iii) Is there any problem of synchronisation	:	The male parent is later than the female parent by 10 days. Hence, it is advisable to sow part of the male parent 10 days in advance and the rest along with the female parent.	
(iv) Reaction to diseases	:	Susceptible to bacterial blight	—
(v) Reaction to pests	:	Tolerant to jassids	Susceptible to jassids
(vi) Agronomic features	:	Does not lodge responds to fertilizers, profuse bearer underwide spacing	Shy-bearer
(vii) Reaction to stresses	:	Highly adaptable, drought tolerant	—

Average yield under normal conditions	:	Mean seed cotton yield 20.2 q/ha. Mean lint yield 6.32 q/ha.
Agency responsible for maintaining breeder seed	:	Central Institute for Cotton Research Regional Station, Coimbatore-3.
Specific recommendation if any, for seed production	:	Foundation stage seeds alone should be used for the production of hybrid seeds.

ANNEXURE III

Important features of the Varieties recommended for Notification in the 14th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop : Cotton

Name of the variety : MCU. 11

Parentage with details of its pedigree : MCU. 5 × Egyptian Hirsutum

Breeder/Institute responsible for maintaining breeder's stock : Cotton Breeding Station, School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.

Description of variety/hybrid : Distinguishing morphological characters

Stem : Pigmented

Internode : Shorter than MCU. 5

Branching : Sympodial

Monopodia : Rare

Leaves : Dark green, 5 lobed, upper surface glabrous more rough than smooth.

Petal : Cream

Pollen : Buff

Boll shape : Medium, ovoid, 4 lobules.

Nectarics : Present but not prominent.

Petal spot : Absent

Seive size : For delinted seeds: 11/64
For Fuzzy seeds : 20 or 25 perforations per square inch.

Identifiable and distinguishable morphological characteristics of the variety : Leaf dark green & smaller than MCU. 9
Leathery & glabrous.
Corolla: Cream in colour
Pollen: Buff in colour

Maturity group (early, medium and late wherever such classification exist) : Medium

Disease and pest resistance (give details of any resistance to pests of diseases including races). : Moderately resistant to bacterial blight and grey mildew.

Recommended ecology : Winter camboida tract of Tamil Nadu

Yield (in kgs/hectares) :

(a) Commercial product : Seed Cotton yield 2168 kg.

(b) Seed : . .

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2. Crop : Groundnut

Name of the variety : ALR. 1

Parentage with details of its pedigree : PO L 2 × PPG. 4

Breeder/Institute responsible for maintaining breeder's stock : Agricultural Research Station, Aliyarnagar, Tamil Nadu.

Description of the variety/hybrid :

(a) Plant height : 35 cm.

(b) Distinguishing morphological characters :

Habit : Bunch

Leaf size : Oblong ellptic

Leaf colour : Dark green

Stem colour : Pigmented
Colour of standard petal : Grade II
Peg pigmentation ; Present
Pod beak : Prominent
Testa Colour : Red
Stem shape : Angular
Hairiness : Scarce
Pod reticulation : Prominent

(c) Days to 50%flowering : 40 days
Days to maturity : 120 days
Maturity group : Medium
Identifiable characters : Small dark green leaves, Red testa.
Disease and pest resistance : Resistant to rust and late leaf spot.
Recommended ecology : Pollachi tract of Coimbatore district.

Yield (in kgs/hec) :
(a) Commercial product : 1840
(b) Seed : 1288

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3. Crop : Groundnut (Spanish Bunch)
Name of the variety : VRI 2
Parentage with details of its pedigree : JL 24 × CO 2 (Selected from the F4 generation)
Breeder/Institute responsible for maintaining breeder's stock : Regional Research Station, Vriddhachalam.

Description of the variety :
(1) Culture Number : VG 77
(2) Origin/pedigree : Hybrid derivative of the cross JL 24 × CO 2
(3) Botanical type : Spanish bunch
(4) Branching : Sequentially branching type
(5) Habit : Bunch
(6) Stem : Medium thick, light green in colour.
(7) Leaf : Medium sized. Ashy green foliage, oblong elliptic, leaves curled downwards.
(8) Flower : Standard petal orange coloured; grade III at the peripheral one fourth yellow within, purple veins-radiating from the basal cresent.
(9) Peg thickness : Medium
(10) Pod size : Bold, clustered at base
(11) No. of seeds per pod : 1-3 seeded; mostly two seeded
(12) Pod beak : Moderately distinct
(13) Pod constriction : Medium
(14) Pod reticulation : Moderately distinct
(15) Shell thickness : Medium
(16) Kernel size : Bold
(17) Seed coat colour : Light rose
(18) Duration : 100-105 days
(19) Average pod yield kg/ha. : Rainfed : 1791
Irrigated : 2060
(20) 100 kernel weight : 49.9 gram
(21) Oil content : 48.0%

(22) Shelling percentage	74.8%
(23) Natural test weight	215.5 gram
(24) 1000 pod weight	1070 gram
Maturity group	100-105 days
Identifiable and morphological characteristics of the variety	Bolder pods and kernels with medium constriction, moderate reticulation on pods with prominent beak.
Disease and pest resistance	Susceptible to rust and late leafspot diseases and to leafminers that of check varieties.
Recommended ecology	Suitable for cultivation under both rainfed and irrigated condition.
Yield (in kg/ha) :	
(a) Commercial produce (Dry pods)	Rainfed : 1791 Irrigated : 2060
(b) Seed (Kernel)	Rainfed : 1340 Irrigated : 1541

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4. Crop	Cowpea (Forage)
Name of the variety	Shweta (No. 998)
Parentage with details of its pedigree	The variety, No. 998 (Shweta) is the selection from the introductions received from the Division of Plant Introductions (NBPGR), IARI, New Delhi during 1976.
Breeder/Institute responsible for maintaining breeders stock	Research Officer, Grass Breeding Scheme, M.P.A.U., Rahuri-413 722 (M.S.)
Description of the variety	(1) Very leafy (L/S ratio 0.7) (2) More number of broad leaves (100 to 110) (3) Remains green from flowering to late pod formation stage without deterioration in forage quality and yield. (4) Most suitable for kharif and summer plantation. (5) Mid late in flowering (70 to 75 days for 50% flowering) (6) Contains about 19.76 percent crude protein in green forage. (7) Can be harvested from pre-flowering flowering to late pod formation stage thereby providing green forage for longer period.
Identifiable and distinguishable morphological characteristics of the variety	(1) Dark green colour (2) More number of broad leaves compared to E.C. 4216 & Russian Giant (3) Seed coat colour—Brick red. (4) Creeping nature—Produces vines.
Maturity group (early, medium and late wherever such classification exist)	Mid late (70-75 days for 50% flowering)
Disease and pest resistance (give details of any resistance to pests or diseases including races)	As the variety is to be harvested at flowering, no serious problem of disease) pest. However as compared to Russian Giant and EC-4216, the variet No. 998 is having tolerance to powdery mildew and sucking pests.
Recommended ecology	Western Maharashtra, both under irrigated as well as rainfed conditions.
Yield :	
(a) Commercial product	G.F.Y.—Kharif 30-35 t/ha Summer 25 to 30 t/ha.
(b) Seed	7 to 8 q/ha.

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5. Crop	Paddy
Name of the variety	Rajshree (TCA 80-4) IET No. 7970.
Parentage with details of its pedigree	Pure line selection
Breeder/Institute responsible for maintaining breeder's stock	Rice Unit, Rajendra Agricultural University, Pusa, Samastipur.
Description of variety/hybrid	Tall, low input variety, tendency to lodge towards maturity, medium slender grain, white kernal, photoperiod insensitive.
Identifiable and distinguishable morphological characteristics of the variety	Tall culture (130-135 cm height) having light green leaves. Medium slender grain with straw colour hull and white kernal.

Maturity group (early, medium and late wherever such classification exist)	Late duration (145-150 days)
Disease and pest resistance	Resistant to Bacterial blight, brown spot Sheath rot and False smut. Moderately resistant to stem borer.
Recommended ecology	Kharif crop suitable for rainfed lowland (upto 30 cm water depth).
Yield :	
(a) Commercial product	35-40 qt/ha.
(b) Seed	30-35 qt/ha.

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6. Crop	Paddy
Name of the variety	Sudha (TCA 72) IET No. 8977
Parentage with detail of its pedigree	Pure line selection
Breeder/Institute responsible for maintaining breeder's stock	Rice Unit, Rajendra Agricultural University, Pusa, Samastipur.
Description of variety/Hybrid	Tall statured, low input variety, photo-period sensitive, long bold grain, straw coloured husk, kernal red.
Identifiable and distinguishable morphological characteristics of the variety	(1) Tall culture (210-220 cm height) which mature in the last week of November (photoperiod sensitive) having light green leaves. (2) Long bold grain with straw coloured husk and red kernal.
Maturity group (early medium and late wherever such classification exist)	Late duration (matured in the last week of November, photoperiod sensitive)
Disease and pest resistance	Resistant to Rice Tungro Virus, Brown Spot, Sheath rot and Stem Borer Moderately resistant to Bacterial Blight.
Recommended ecology	Suitable for shallow deep water condition (100 cm water depth) under direct seeded condition
Yield:	
(a) Commercial product	20-25 Qtls/ha.
(b) Seed	15-20 Qtls/ha.

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7. Crop	Paddy
Name of the variety	Kanak (IET 1009) IST No. 8033
Parentage with detail of its pedigree	Parentage : Jaya × Br 34 Pedigree : IET 1009
Breeder/Institute responsible for maintaining breeder's stock	Agricultural Research Institute, Mithapur, Patna-800 001, Bihar.
Description of variety/hybrid	Semidwarf, fertilizer responsive, broad dark green erect leaves, long bold grain, kernel colour white, photoperiod insensitive.
Identifiable and distinguishable morphological characteristics of the variety	(1) Semi-dwarf culture (100-110 cm height (having broad dark green and erect leaves. (2) Long bold grain with straw : hull and white kernel.
Maturity group	Medium duration (130-135 days).
Disease and pest resistance	This variety was found resistant to Bacterial Blight. It was also found moderately resistant to stem borer, leaf hopper, plant hopper and grass hopper.
Recommended ecology	Suitable for Kharif season under transplanted condition (medium land).
Yield :	
(a) Commercial product	40-45 Qtls/ha.
(b) Seed	30-40 Qtls/ha.

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8. Crop	Paddy
Name of the variety	ASD. 17
Parentage with details of its pedigree	ADT 31/RATNA/ASD8/IR8
Breeder/Institute responsible for maintaining breeder's stock	Professor and Head, Rice Research Station, Ambasamudram-627 401.
Description of the variety/hybrid :	
(a) Plant height	96 cm

(b) Distinguishing morphological featurers:

Habit	:	Semidwarf, slightly open (Intermediate)
Anthocyanin pigment	:	Absent
Internode	:	Green
Leaf-Sheath	:	Green
Pulvinus	:	Green
Septum	:	Cream
Lepf Axil	:	Pale green
Juncture	:	Pale green
Ligule	:	White, 2-Cleft
Auricle	:	Pale green
Panicle	:	Compact, Intermediate density, drooping; Just exerted.
Lemma, Palea	:	Green at emergence & Straw at ripening.
Apiculus	:	Green
Husk colour	:	Straw
Rice colour	:	Red
Abdominal white	:	Present
Grain-L × B × T (mm)	:	7.90 × 2.80 × 1.88
1000-grain weight (g)	:	23.8
Brown-rice-L × B × T (mm)	:	5.52 × 2.46 × 1.62
Brown rice - L/B ratio	:	2.24
Rice grade	:	Short bold
(c) Days to 50% flowering	:	71 (65-78)
Days to maturity	:	101 (95-100)
Identifiable and distinguishable morphological characteristics of the variety	:	Spikelet — Green tip Rice — Short bold and red. Senescence — Early senescence at maturity.
Disease and pest resistance :		
(i) In the field condition :		
Leaf blast	:	Grade-5
Neck blast	:	Grade-5
RTV	:	Grade-5
(ii) Under controlled condition (Reaction to physiological strains/biotypes to indicate wherever possible to tabular form)		BS-7MS(5) BLB-MS (5) SHR-MR (5) SHB-MS (5)
(iii) Reaction to major insects in controlled condition including storage insects (give in tabular form)		SR-MS (5) GM-MS (5) BPH-MR (3) WBPH-MS (5) LF-MS (5)
Recommended ecology		Kannipoor or Kar (May-August) Kumbapoor or Late Pishaman (Nov-Feb) seasons.
Yield (in kgs/hec) :		
(a) Commercial product		5400 kg/ha
(b) Seed	:	3600 kg/ha

9.	Crop	:	Paddy
	Name of the variety	:	MDU 3 (IET 6012)
	Parentage with details of its pedigree	:	IR 8 × W 1263
	Breeder/Institute responsible for maintaining breeder's stock	:	Department of Agriculture Botany, Agricultural College & Research Institute, Madurai.
	Description of variety/Hybrid	:	Plant height 92 cm, Semi dwarf with dark green leaves, glumes dirty brown in colour with GPT stigma purple. 120-125 days duration.
	Identifiable and distinguishable morphological characteristics of the variety	:	(a) Dirty brown glume with GPT and purple colour stigma. (b) Long slender grain.
	Maturity group	:	Medium duration.

Disease and post resistance	(a) Highly resistant to gall midge. (b) Resistant to BPH, leaf folder, leaf blast. (c) Moderately resistant to WBPH, neck blast, brown spot.
Recommended ecology Season	Sep-Oct. to Jan-Feb.
Yield (in kgs/hectare) :	
(a) Commercial product	4970 kg/ha.
(b) Seed	3800 kg/ha.

10. Crop	Sesamum
Name of the variety	E-8
Parentage with details of its pedigree	Introduction from A.P.
Breeder/Institute responsible for maintaining breeder's stock	Sr. Scientist (Oil Seeds), UAS., Dharwad-5.
Description of variety/hybrid	Tall plant (120-160 cm), branching, alternate bearing, broad leaf.
Identifiable and distinguishable morphological characteristics of the variety	Tall plant stature, medium branching, alternate fruiting habit, broad leave with lobes four locules capsules and white seeded.
Maturity group	Late
Disease and pest resistance	Moderately resistant to Powdery mildew
Recommended ecology	Northern districts of Karnataka.
Yield (in kgs/hectares) :	
(a) Commercial product	—
(b) Seed	500 kg/ha.

11. Crop	Indian bean (*Avarai*)
Name of the variety	Co. 11
Parentage with details of its pedigree	Hybrid derivative of Co. 9 × White Yanaikathu.
Breeder/Institute responsible for maintaining breeder's stock	Professor (Minor Pulses), School of Genetics, Tamil Nadu Agricultural University, Coimbatore-3.
Description of the variety/hybrid :	
Plant height	61.0 cm.
Plant habit	Dwarf, bushy
Pigmentation	Green with purple wash stem and purple pigment at nodes
Branches	3
Leaves	Trifoliate, medium
Inflorescence	Axillary and terminal raceme
Flower colour	Purple, sepal-purple
Pods	Green, flat, broad pods with purple coloured suture
Pod Length	8.6 cm.
Pod breadth	3.1 cm.
Seeds/Pod	4
Pods/receme	9
Pods/plant	25
100 seed weight	0.35 gram.
Seed colour	Blackish brown
Identifiable and distinguishable morphological characteristics of the variety	(i) Stem is green with purple wash. (ii) Purple flower, sepal purple. (iii) Pod : Broad, attractive green colour, pod with purple margin.
Maturity group	Early
Disease and pest resistance	It has field tolerance to major diseases like leaf spot, YMV and root rot. It also has field tolerance to leaf eating caterpillars, weevils and aphids but susceptible to pod borer. All have been scored under protected conditions.
Recommended ecology	This crop being short duration and photoinsensitive, can be fitted in an irrigated farming system throughout the year in cultivation. This can be raised as a pure crop.
Yield :	
(a) Commercial product	Green pods—9.4 tons/ha.
(b) Seed	1,115 kg/ha.

12. Crop	:	Mungbean
Name of the variety	:	Vamban 1
Parentage with details of its pedigree	:	Hybrid derivative of cross s.8 × PIMS. 3
Breeder/Institute responsible for maintaining breeder's stock	:	National Pulses Research Centre, Vamban, Pudukkottai District Tamil Nadu.
Description of variety/hybrid :		
Plant height	:	41.00 cm.
Habit	:	Erect
Pigmentation	:	Green
Branching	:	2-3 branches
Stem	:	Sparsely hairy
Leave	:	Trifoliate, Ovate
Inflorescence	:	Axillary raceme
Flower colour	:	Yellow
Stigma	:	Capitate
Stamens	:	Diadelphous
Pods	:	Slightly hairy Dark green colour Dry pod is light blackish to black colour
No. of seeds/Pod	:	10-12
Seeds	:	Medium size Green colour
100 seed weight	:	3.6 gm.
Identifiable and distinguishable morphological characteristics of the variety	:	(1) Short erect plant type with ovate leaves. (2) Drooping pods. (3) Slightly hairy green stem. (4) Green colour medium size seeds.
Maturity group	:	Short duration.
Disease and pest resistance	:	Yellow Mosaic Virus incidence is lesser when compared to local variety.
Recommended ecology	:	Recommended for kharif season in Pudukkottai, Salem, North Arcot, South Arcot and Kamarajar Districts of Tamil Nadu. It was also recommended for Rabi season in Tirunelveli and Kamarajar Distt.
Yield (in kgs/hectare):		
(a) Commercial product	:	—
(b) Seed	:	750 kg/ha.

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13. Crop	:	Sorghum
Name of the variety	:	K. 8
Parentage with details of its pedigree	:	Hybrid derivative of the cross IS. 12611C × SC 108
Breeder/Institute resposible for maintaining breeder's stock	:	Agricultural Research Station, Tamil Nadu Agricultural University, Kovilpatti.
Description of variety/hybrid :		
(a) Plant height	:	170-180 cm.
(b) Distinguishing morphological characters	:	Tan plant and late senecent leaves, elongate and semicompact panicle, pearly white grain.
(c) Days to 50% flowering	:	60-65 days for 50% flowering
Days to maturity	:	91-116 days
(d) Reaction to major diseases	:	Tolerant to grain mould leaf blight, downy mildew and colletotricum leaf spot diseases.
(e) Reaction to major Insects	:	Moderately resistant to shootfly and stemborer.
(f) Agronomic features	:	Responsive to fertilizer, Non-lodging, tolerant to drought.

	Identifiable and distinguishable morphological characters of the variety	Tall plant and late senescent leaves; elongate and semi compact panicle; pearly white, medium bold grain; Dull white mid rib, and Reddish purple leaf sheath.
	Maturity group	Early
	Recommended ecology	Rainfed crop in the North-East monsoon season in Southern Districts of Tamil Nadu.
	Yield (in kgs/hectares) :	
	(a) Commercial product	Grain : 2440 Fodder : 7300 kg/ha.
	(b) Seed	2000 kg/ha.

14.	Crop	Bajra × Napier hybrid
	Name of the variety	Yeshwant (RBN-9)
	Parentage with details of its pedigree	Giant bajra × Elephant grass (Napier)
	Breeder/Institute responsible for maintaining breeder's stock	Research Officer, Grass Breeding Scheme, Mahatma Phule Agricultural University, Rahuri-413 722.
	Description of the variety :	(1) Long tillers with more girth (2) Long and broad leaves. (3) High L/S ratio (0.86) (4) High crude protein content (10.57%) (5) Low oxalic acid content (2.46%) as against 3.11% in Gajraj. (6) Very less leaf hairiness. (7) The forage is leafy, dark green, Juicy and palatable. (8) More number of tillers. (9) High in *vitro* dry matter digestibility (63.65%)
	Two identifiable and distinguishable morphological characteristics of the variety	(1) Very less leaf hairiness (2) Long and broad leaves compared to Gajraj & NB. 21.
	Disease and pest resistance	No serious problem of diseases and pest noted.
	Recommended ecology	Maharashtra State (Irrigated conditions)
	Description of the parents of the hybrid	Giant bajra is a released forage bajra variety. It is leafy, juicy, palatable and profusely tillering and has multi cutability, less oxalic acid content and wide adaptability. Napier (Elephant grass) is a perennial and gives high yields of green matter. It requires good soil & irrigation at frequent intervals It is propagated vegetatively. Hence no need to produce fresh hybrid seed.
	Yield .	
	(a) Commercial product	Green forage: 150 to 200 t/ha in a year.

ANNEXURE IV

Important features of the Varieties recommended for Notification in the 14th Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1.	Crop	Onion
	Name of Variety	Baswant (780)
	Parentage	Selection from local culture from Pimpalgaon and developed by selfing and group breeding.
	Breeder/Institute responsible for maintaining stock	Sr. Vegetable Breeder, Mahatma Phule Agricultural University, Rahuri, Distt. Ahmednagar.
	Description of variety	Plant height is 48 cm. Matures in 120 days. Bulb colour is red and 7.4 cms. polar 5.00 cm. equatorial and mild in taste. Given 5% higher yield than N 53 in Multilocation trials but superior over the standing variety for bolter.
	Identifiable and distinguishable morphological characteristics of the variety	Globes bulb of lighted colour which becomes dark red on drying. The proportions of bolter and twins are very less.
	Disease and pest resistance	Tolerant to Thrips
	Yield :	
	(a) Commercial prod.	270-350 Q/ha.

2.	Crop	Tomato (*Lycopersicon esculentum Mill*)
	Name of the Variety	ATV-1
	Parentage	It is a selection from the germplasm line EC-8819 (Merit) (Denmark).
	Breeder/Institute responsible for maintaininig breeder stock	Asstt. Breeder (Vegetable), Fruit Research Station, Himayat Bagh, Marathwada Agricultural. University, Aurangabad.
	Description of variety	Plant height is 100 to 110 cm and habit is determinate, fruits are medium and sphere shape with Blood red colour. Pulp colour Rosy. Number of fruits per cluster area 6 to 7 and grooves on the fruit are absent. Leaves are large with dark green colour and given superior yield of 27% than check pusa Ruby and having good taste.
	Identifiable and distinguishable morphological characteristics of the variety	ATV-1 is having determinate plant habit with large and dark green coloured leaves. Fruits are medium, sphere shape with blood red colour. Pulp colour is Rosy and grooves on the fruit are absent.
	Diseases and pest resistance	Moderately resistant to disease early blight (*Alternaria solani*) and virus (leaf curl disease, vector white fly.)
	Yield	
	(a) Commercial production	402 quintals/ha (ripe fruit yield)
	(b) Seed	30 kg./ha.

3.	Crop	Tomato (*Lycopersicon esculentum Mill*)
	Name of the variety	ATH-1
	Parentage	Female - AC-2549-Male-Hawaii-7992
	Breeder/Institute responsible for maintaining breeder stock	Asstt. Breeder (Vegetable), Fruit Research Station, Himayat Bagh, Marathwada Agricultural. University, Aurangabad.
	Description of parents	AC-2549 (Female)—It is positional male sterile. It has viable pollen but anthers do not dehisce so that natural self pollination is prevented. This female parent has very large and dark green leaves with profuse branches. Hawaii-7992 (Male): It has very good yield potential. It is TMV and root knot resistant. Fruit skin is thick with deep grooves.
	Description of Hybrid	Plant height of ATH-1 is 130 to 135 cm., with indeterminate habit. Fruit shape is sphere, medium large size with average of 110 to 120 gms. weight coral red colour and pulp colour is regonia rose.
	Identifiable and distinguishable morphological characteristics of the variety	ATH-1 is having thick large leaves with dark green colour. Fruit is medium with spherical shape having coral red colour. Grooves are absent.
	Disease and pest resistance	ATH-1 is tolerant to early blight disease (*Alternaria solani*) and virus.
	Yield :	
	(a) Commercial production	531 quintals/ha (Ripe fruit yield)
	(b) Seed	20 kg./ha.

4. Crop	:	Tomato
Name of the variety	:	Sonali (Selection-2)
Parentage	:	Seed Parent-VS 48-1—Pollen Parent—Tamu chico-III, ACC. No. CL. 143-0-10-3(R-5)
Breeder/Institute responsible for maintaining Breeders stock	:	Vegetable Specialist, Vegetable Improvement Scheme, K.K.V., Dapoli.
Description of variety	:	Konkan Krishi Vidyapeeth, Dapoli has screened 110 varieties at Wakawali A promising culture was isolated from the advanced line in VI generation received from Asian Vegetable Research and Development Centre, Taiwan-China in the year 1979. It was tested under wilt sick soil condition. The selected plants were selfed and were carried further through single seed decent method. The promising culture was then purified and named at Selection-2 The plant height is 60.85 cms. It matures in 120 to 150 days.
Identifiable and distinguishable morphological characteristics of the variety	:	The culture has required 40 days for 50% flowering. There are 8 flowers/ cultures and 6 fruits/clusters. The culture has minimum 65 fruits per plant and average weight of fruit is 70 gm. It's fruit shape is oval. The fruits have good keeping/quality and suitable for transplanting during rabi season.
Disease and pest resistance	:	Resistant to bacterial wilt.
Yield :		
(a) Commercial	:	300 to 350 qtls./ha.
(b) Seed	:	200 to 225 kg. /ha.

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5. Crop	:	Brinjal
Name of the variety	:	Aruna
Parentage	:	It is a Selection geno-typed from locally grown brinjal in Digras area of Yeotmal District.
Breeder/Institute responsible for maintaining breeders stock	:	Department of Horticultue, PKV, Akola.
Description of variety	:	It is high yielding, early variety which produce small medium sized, roundish oval, bright plum red fruits in clusters. It has good market demand and performed well during summer season.
Identifiable and distinguishable morphological characteristics of the variety	:	Violet flowers in clusters of 2-4. Small to medium sized roundish oval fruits, having small whitish spot at distal end. With bright plum red colour.
Disease and pest resistance	:	It has shown less susceptibility to little leaf disease as well as to shoot and fruit borer under field condition.
Yield :		
(a) Commercial production	:	300-375 Q/ha (normal rainy season) 200-210 Q/ha (in summer season).
(b) Seed	:	1.5 to 2 Q/ha.

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6. Crop	:	Cucumber (*Cucumas Sativus*)
Name of the variety	:	Sheetal
Parentage	:	Selection from local material.
Breeder/Institute responsible for maintaining Breeder stock	:	Vegetable Improvement Scheme, Central Experiment Station, Wakavali Tal Dapoli, Dist. Ratnagiri (Konkan Krishi Vidyapeeth, Dapoli).
Description of variety	:	A promising type of cucumber was isolated and purified from Bulk collected from Pen in the year, 1980. Best type DPL-13 was found to be very promising. This variety is suitable for kharif season.
Identifiable and distinguishbale morphological characteristics of the variety	:	Matures in 90 to 100 days, fruit size is big and oblong in shape and tasty. Flower colour is deep yellow with 200 to 250 seeds per fruit. 100 seed weight is 2.8 gm. good keeping quality. (a) Medium size elongated fruits. (b) Green coloured fruits becoming pale green towards apical end.
Disease and pest resistance	:	No particular resistance is noted but at par with local types.
Yield :		
(a) Commercial production	:	Average yield of last 3 years.
(b) Seed	:	42.45 tonnes/ha.

7.	Crop	Dolichos bean.
	Name of the variety	Deepali wal.
	Parentage	It is selection made from locally grown Pandhara (Whitish) wal from Bhandara District region.
	Breeder/Institute responsible from maintaining breeder's stock	Department of Horticulture, PKV, Akola-444 104.
	Description of variety	It is high yielding having Flat, long whitish green pods which matures in 150 days. There is good market demand for this type in the region. 100 seed weight 66.04 gram.
	Identifiable and distinguishable morphological characteristics of the variety	Reddish brown coloured, flat and kidney shaped seeds. Pods are flat and long having whitish green colour.
	Disease and pest resistance	Less susceptible to bean mosaic in field condition.
	Yield :	
	(a) Commercial production	150-160 Q/ha of fresh pods.
	(b) Seed	3-3.5 Q/ha.

8.	Crop	Dolichos Bean
	Name of the variety	Dasara Wal
	Parentage	It is a genotype selected from locally grown wal type from Bhandara District.
	Breeder/Institute responsible for maintaining breeder's stock	Department of Horticulture, PKV, Akola.
	Description of variety	It is a pod, type producing medium flat and purplish green pods. It is earliest maturing type (120 days) as well as gives high yield. It has good demand in market, house preferred and fetches high prices being early.
	Identifiable and distinguishable morphological characters of the variety	100 seeds weights 49.06 gms. It produces violet flowers and has dark green leaves with purple veination. Purplish petiole Rachis, purple stem etc. Seeds oval flat creamy white with distinct black spot on hilum.
	Disease and pest resistance	It has shown less susceptibility to bean mosaic under field condition. No major pest incidence was observed.
	Yield :	
	(a) Commercial production	130 to 150 qtls./ha of fresh pods.
	(b) Seed	3-4 qtls. /ha.

सत्यमेव जयते

Minutes of the fifteenth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 28th February, 1990 under the Chairmanship of Dr. R. S. Paroda, DDG (CS), ICAR

The list of the participants is at Annexure I.

2. The Chairman welcomed the participants and stated that presently, there is no backlog and Committee usually meets after three-four months to avoid any delay in release and notification of proposals. He also mentioned the importance of the critical scrutiny of the proposals at varietal identification and Central Sub-Committee on Crop Standards, Notification and Release of Varieties levels. He further mentioned that proposals of the varieties released at State level comes only for notification and they are usually tested only for one year under the coordinated trial to become eligible for notification. Sometimes, these varieties were not accepted by farmers and their notification was merely of an academic nature. Testing and proper evaluation of these varieties required indepth study.

3. Dr. T. V. Sampath, Agriculture Commissioner mentioned that unless this Committee recommended only good and demonstrably superior varieties, it would be very difficult to replace the old and obsolete varieties. The release and notification of the less superior varieties would not solve any problem rather it will add to the problems already encountered by the officials of the Extension Department in the States and Central levels in dealing with large number of varieties.

4. Shri R. M. Sethi, Jt. Secretary (F & S) mentioned that considerable time and money is required to develop a new plant variety. Therefore, it was imperative that only superior varieties were released/notified. He suggested various action points for bringing improvement in the functioning of the Secretariat of the Central Sub Committee on Crop Standards, Notification and Release of varieties and also for evaluation of the proposals. The important points mentioned were as follows:

(i) the quantity of breeder seed for each variety in columns No. 12-b and 14-b of release and notification proposals respectively should be specified based on the area/States for which variety was proposed for release/notification.

(ii) the information on the various test such as yield, quality, disease and pests, agronomic trials etc. should be furnished in specified tables as per prescribed proforma.

(iii) information relating to variety release proposals could be computerised and the proposal could be put up by secretariat accordingly.

(iv) if a proposal has been deferred then specific time limit might be specified for its resubmission.

(v) each proposal should be accompanied with brief economic analysis based on the agronomic trials.

(vi) possibility of setting up an independent institute to test the varieties specially against the claim made by the originating institute/breeder might be explored.

(vii) the secretariat of the Committee should have data processing facilities for proper analysis and documentation of the varieties.

5. On above points, Chairman stated that suitable proforma has already been devised and breeder seed quantity is always ascertained. The system of testing under coordinated programme is to ensure proper evaluation of varieties and possible bias is eliminated. Efforts are obviously needed for yet better monitoring, for which council is already taking appropriate action.

6. The Committee also recommended the following:

(i) All Project Directors/Coordinators should only forward the proposals having data tables in a sequence starting from yield data (Table 1), Duration (Table-2), Quality characters (data related to various quality factors) (Table-3), tolerance to the various diseases/pests under natural and epiphytotic condition (Table-4), stressess such as drought, water logging, salinity/alkalinity etc. (Table-5), Agronomic data (Table-6), Specific characters, such as storability, keeping quality, transport etc. (Table-7), Consumer preference, wherever it is applicable (Table-8), Economic analysis (Table-9) and Adaptive minikit trial (Table-10). If more data is to be accommodated under any factor and more tables were required, the additional tables might be numbered as Table- 1-a, 1-b, 1-c and so on.

(ii) The importance of the minikits/adaptive trials was reiterated and it was recommended that Agriculture Commissioner might like to discuss this issue with DDG (CS), ICAR, JS (F&S) and the representatives from different States and various Crop Directorates to make the programme functional.

(iii) The State Seed Sub Committee should also follow the same proforma for release of State importance varieties used by Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

(iv) The Committee also recommended that certification agencies might accept provisional certification of the varieties just recommended for release and notification because notification will take some time. It will held to utlise the current rabi/summer seasons to produce certified seeds of these varieties. The participants of various States requested for permission for provisional certification of Bajra hybrid HHB-67, Wheat WH-416 and Bengal gram Haryana Chana-1. Committee approved the same.

7. After this, regular Agenda items were taken for discussion. The decisions of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each item is indicated as under:—

Item No. 1 : Confirmation of the Minutes of the 14th Meeting of the Central Sub-Committee on Crop Standards. Notification and Release of Varieties held on 1st September, 1989.

8. The Minutes of the previous meeting were confirmed.

Item No. 2 : Review of action taken on the Minutes of the 14th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

9. The position indicated in the Agenda Note was noted by Committee/participants.

Item No. 3 : Release of Varieties

10. Thirty five proposals of various varieties of different crops were considered for Release and Notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated in the Table given below:—

Table No. 1 : Details of the Varieties recommended for Release/Notification

Sl.	Crop	Variety	Remarks
1	2	3	4
1.	Cowpea	Gujarat Cowpea-3 (GC 82-7)	Recommended for Release for cultivation in Southern Zone *i.e.* Andhra Pradesh, Karnataka, Tamilnadu and Kerala.
2.	**Moong	PDM-54 (Moti)	Recommended for Release for cultivation in Southern Zone *i.e.* (i) Andhra Pradesh, Karnataka, Tamil Nadu and Kerala and (ii) North Eastern Hill Zone (Manipur, Nagaland, Tripura, Arunachal Pradesh, Mizoram, Meghalaya and Sikkim.)
3.	Forage Sorghum	MFSH-3	Recommended for Release for cultivation in Northern part of the country particularly, in States like Punjab, Haryana, Delhi, Western parts of Uttar Pradesh, Gujarat and Rajasthan.
4.	Guar	RGC-197	Recommended for Release for cultivation in all the guar growing areas.
5.	Toria	PT-507 (PT-507 -B)	Recommended for Release for cultivation for Eastern Zone (Bihar, West Bengal and Orissa).
6.	Wheat	KRL-1-4	Recommended for Release for cultivation in salt affected soils of North West Plain Zone and North Plain Zone.
7.	Wheat	WH 416	Recommended for Release for cultivation for early to timely sowing under medium to high fertility irrigated condition throughout North Western Plain Zone (Western Haryana, Rajasthan and Northern parts of Gujarat).
8.	Wheat	HDR 77	Recommnended for Release for cultivation for Eastern Zone comprising of parts of Bihar, West Bengal, Assam and all other far Eastern States.
9.	Pumpkin	Pusa Vishwas (Sel. 107)	Recommended for Release for cultivation for Zone 1 (Solan) Zone 4 (Delhi) Zone 8 (Bangalore) and Zone 5 (Bhubaneswar).
10.	Maize	DHM 105 (E. H. 40184)	Recommended for Release for cultivation for All-India (Zones I, II, III, IV & V.)
11.	Maize	Madhuri (Sweet corn)	Recommended for Release for cultivation in Andhra Pradesh.
12.	Maize	Varun (Synthetic B-41)	Recommended for release for cultivation in Southern Zone.
13.	*Chewing tobacco . .	Pusa tobacco-76 (HP 76-1)	Recommended for Release for cultivation in Chewing tobacco growing tracts of Samastipur and Muzaffarpur Districts of North Bihar.
14.	**Indian Mustard (Raya) . .	RL-1359	Recommended for Release for cultivation in North Western Zone.
15.	Onion	Arka Niketan (Sel. 13)	Recommended for Release for cultivation in areas of : Zone-IV : Kalyanpur and Pantnagar (UP). Zone-VII: Nasik (Mah.) and Jabalpur (MP). Zone-VIII: Hessaraghatta (Karnataka).

1	2	3	4
16.	Onion	Arka Kalyan (Sel. 14)	Recommended for Release for cultivation in areas of : Zone-IV: Sabour (Bihar) and Ludhiana (Pb.) Zone-VI: Junagadh (Guj.) and Hissar (Hr.). Zone-VII : Ambajogai, Nasik and Rahuri (Maharashtra). Zone-VIII: Hessaraghatta (Karnataka) and Coimbatore (Tamilnadu).
17.	Pumpkin	Arka Chandan (IIHR 105-1-1)	Recommended for Release for cultivation in Karnataka and Coimbatore.
18.	Watermelon	Arka Manik (IIHR 21 × 4×4×4)-2-9-7.	Recommended for Release for cultivation in Maharashtra and Karnataka States.
19.	French bean	Arka Komal (Sel. 9)	Recommended for Release for cultivation in areas of: Hilly regions of UP and HP-Almora, Katrain and Solan. Rahuri (Mah.) and Hessaraghatta (Kar.).
20	Tomato	Arka Vikas (Sel. 22)	Recommended for Release for cultivation in following Zones: I — Solan (HP) II — Kalyan, West Bengal. IV — Ranchi, Ludhiana, Kalyanpur, Pantnagar, States of Bihar, UP & MP. V — Bhubaneswar, Orissa. VI — Navsari, Gujarat. VII — Rahuri, Ambajogai, Maharashtra VIII — Hessaraghatta, Karnataka.
21.	**Chickpea	PBG-1 (GL 83119)	Recommended for Release for cultivation in North Western Plains Zone which is blight prone area.
22.	Oat	UPO 212	Recommended for release for cultivation in all Oat growing areas of the Indian Union.
23.	Paddy	Shaktiman (IET 7316)	Recommended for release for cultivation in Gall midge endemic areas of Orissa, MP, Assam and Karnataka.

*Seeds of Tobacco are not covered under the Seeds Act and hence variety will not be notified under Section 5 of the Seeds Act.

**Moong PDM-54 notified vide S.O. 834(E) dt. 18-9-87 and Toria RL 1359 and Chickpea PBG-1 have already been notified vide SO 1135(E) dated 1-12-88.

11. The detail of the important features of the above varieties is given in Annexure II.

12. In the previous meeting, the Committee authorised Chairman to decide release/notification of some Groundnut varieties namely ICGS-1, ICGS-5, ICG (FDRS)-4 and ICG (FDRS)-10 after receipt of additional information from Project Coordinator (Groundnut).

13. After examination of the data and recommendations of the Project Coordinator, the Chairman recommended two varieties for release and notification. The detail of the same is as under:

Sl. No.	Crop	Variety	Remarks
1.	Groundnut	ICGV 87119 (ICGS-1)	Recommended for release for cultivation in rainy season of Zone-I (Haryana, Punjab, UP, Bihar, Rajasthan).
2.	Groundnut	ICGV 87160 ICG (FDRS) 10	Recommended for release for cultivation in Andhra Pradesh, Karnataka and part of Maharashtra during rainy season.

14. The details of the Morphological characters of the above varieties are given in Annexure II.

Table No. 2 : List of the varieties deferred for the subsequent meetings for want of more information

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Bajra	ICMV 84400 (MP 155) ICMV-155	The data show that proposed cultivar has not shown much superiority in respect of yield or disease (downy mildew) over WCC-75 in main Bajra growing areas of the country. However, if sponsoring authority considers that it is better than WCC-75 in any specific area, the proposal might be resubmitted alongwith necessary data to substantiate the claim.

1	2	3	4
2.	Bajra	MH 229 Hybrid (VBH-4)	(i) The data show that hybrid has shown superiority in various Bajra growing States but it has been recommended for cultivation only for States of Maharashtra and Haryana. The Variety Identification Committee might examine this aspect. The Crop Workshop is likely to be held in April, 1990 and Project Coordinator (Bajra) might take up this issue. (ii) This particular hybrid has not shown much superiority in State of Haryana and before recommending the hybrid for Haryana, necessary data might be generated. (iii) The data pertaining to the testing of hybrid under epiphytotic condition for downy mildew disease might also be submitted.
3	Paddy	IET-8021	The proposal might be resubmitted alongwith data on agronomic trial and detail of the variety used as local check. It may also be clarified whether the variety has been tested against Manohar sali and if so, data thereof. The data especially of 1986 might also be provided.
4.	Rice	IET-8558	The proposal might be put up alongwith the recommendations of the Workshop.
5.	Paddy	IET 6997 (CSR-6)	-do-
6.	Brinjal	SM-6-7	The sponsoring authority might confirm whether the variety has been identified by the Vegetable Workshop. This is because Project Coordinator (Veg.) mentioned that this variety has not been identified by the Workshop.

Table No. 3 : Details of the varieties which could not be recommended for release/notification

Sl. No.	Crop	Variety	Remarks
1.	Coconut	Kera Ganga	The variety has been proposed for release only for Kerala State. The sponsoring authority might submit the proposal to Kerala State Seed Sub Committee for release.
2.	Coconut	Anantha Ganga	-do-
3.	Brinjal	ARU-2C	The variety has not shown distinct superiority.
4.	Pumpkin	Arka Suryamukhi	-do-
5.	Radish	Arka Nishant	This variety is recommended for release only for Karnataka State The proposal might be submitted to Karnataka State Seed Sub-Committee for release.
6.	Tomato	Arka Saurabh	Arka Vikas found superior in comparison to Arka Saurabh.

Item No. 4 : Consideration of proposals for notification

15. Thirty two proposals were considered. The recommendation is indicated in the following Tables:

Table No. 4 : Details of the varieties recommended for notification under Section 5 of the Seeds Act for entire country

Sl. No.	Crop	Variety
1	2	3
1.	Bajra	HHB 67
2.	Fodder Bajra	Raj. Bajra Chari-2
3.	Golden Timothy (*Setaria anceps*)	PSS-1
4.	Sorghum	SPH-468 (AKSH 14-150)
5.	Sorghum	SPH-388 (AKSH-73)
6.	Sorghum	SPV-669 (AKSV-37)

1	2	3
7.	Maize	Parvati (Composite)
8.	Gram	Haryana Chana No. 1 (H-82-2)
9.	Wheat	HP-1493
10.	Til	Krishna
11.	Toria	RAUTS-17
12.	Groundnut	Birsa Groundnut-3 (BG-3)
13.	Groundnut	MH-4
14.	Soyabean	Shiwalik (HIMSO-333)
15.	Soyabean	Js-76-205 (Jawahar Soyabean)
16.	Paddy	Sakoli-7 (IET-10651)
17.	Paddy	SYE-ER-1 (IET-9296)
18.	Barnyard Millet	VL Madira-21
19.	Finger Millet	VL Mandua-124
20.	Bengal gram	Phule G-12
21.	Paddy	Ratnagiri-1
22.	Paddy	Ratnagiri-2
23.	Paddy	Karjat-1
24.	Paddy	Palghar-1
25.	Paddy	Panvel-2

16. The details of the morphological characters of above varieties are given in Annexure III.

17. Details of the varieties have been deferred for next meeting are given as under. The sponsoring authorities advised to resubmit the proposals alongwith information indicated against each variety.

Table No. 5 : Varieties which could not be recommended for notification

Sl. No.	Crop	Variety	Remarks
1	2	3	4
1.	Moth bean	MBS-27	The variety may be tested in All India Coordinated Project and Proposal might be re-submitted along with data of All-India Coornated Project.
2.	Cotton	AKA-8401	The Project Coordinator of Cotton mentioned that AKA-8401 has not been recommended by workshop as stated in the proposal. The sponsoring authority may verify.
3.	Linseed	Janaki (KL-43)	The variety may be tested in All India Coordinated Project and proposal might be resubmitted alongwith data of All-India Coordinated Project.
4.	Sunflower	SS-56	The variety has been reported susceptible to downy mildew disease. The Sponsoring Authority might clarify the reasons for recommending variety for cultivation in downy mildew areas.
5.	Barley	RD 2052	The variety may be tested in All-India Coordinated Project and proposals might be resubmitted along with data of All-India Coordinated Project.
6.	Moong	Phule M-2	-do-
7.	Cotton	Nagnath (PH-93)	-do-

Item No. 5 : Modification in the recommendation of specified area adaptation of Groundnut variety Girnar-I.

18. The Committee approved the modification in recommendation relating to specific areas of adaptation of Girnar-I variety of Groundnut. The area of adaptation would be as follows:

"variety is suitabe for cultivation in Zone-V (Peninsular zonal comprising of Andhra Pradesh, Karnataka and Southern Maharashtra and Tamil Nadu during Kharif season".

Item No. 6 : Specification of minimum limits of germination Purity and particulars of mark/label.

19. The Committee approved the following:

(i) Physical purity and germination of the kinds/ varieties as mentioned in Annexure IV.

(ii) The size and contents of the label to be affixed on the seeds of notified kind should be as follows:

← 15cm. →

10 cm.

Label	:	*Name of the chemical used for seed treatment, if seed is treated.
Kind		
Variety	:	
Lot No.	:	
Date of Test	:	
Valid upto	:	
Germination (minimum)	: %	
Purity (minimum)	: %	
Genetic Purity (minimum)	: %	
Weight (Kgs.)	:	

Name and address of the person who offers for sale, sells or otherwise supplies the seed and who will be responsible for its quality.

*(i) If seed has been treated, the following statement will also be printed on label:

"If the substance of the chemical used for treatment, and present with the seed is harmful to human beings or other vertibrate animals, a caution statement such as "Do not use for food, feed or oil purposes." The caution for mercurials and similarly, toxic substance shall be the word "POISON" which shall be in type size, prominently displayed on the label in red."

(ii) If the label is to be affixed on a smaller container or printed on a small container then the size of the label may be reduced proportionately. However, length and breadth ratio and contents will remain the same.

20. However, label of the breeder seed shall be in the form and manner as specified in the Minimum Seed Certification Standards, 1988.

(iii) Genetic purity of the seeds of notified varieties:

	Minimum Genetic Purity Standards (%)
(a) Varieties	98
(b) Composite, synthetics, multilines & hybrids.	95

21. The testing of the varieties for genetic purity through grow out test would need more time till biotechnology methods are standardised and, hence, it would need appropriate amendment in Rule 21 of the Seed Rules, 1968.

(iv) Every sample drawn need not to be invariably tested for genetic purity and it should be subject to the genetic purity test if doubt about its purity exist or a complaint has been received.

Item No. 7 : Draft proforma for submission of proposal of denotification of varieties under Section 5 of the Seeds Act.

22. The draft proforma for submission of proposal of denotification was approved as per Annexure-V. The Committee also requested all Project Directors/ Coordinators and State Departments of Agriculture to furnish the proposal of denotification at the earliest.

23. The Meeting ended with a Vote of Thanks to the Chair.

ANNEXURE I

List of participants who attended the 15th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held at 10 A.M. on 28th February, 1990 under the Chairmanship of DDG (CS), ICAR, Krishi Bhavan, New Delhi

1. Dr. R.S. Paroda, *Chairman*
Deputy Director General (CS),
Indian Council of Agri. Research,
Krishi Bhavan, New Delhi.

2. Shri R.M. Sethi,
Joint Secretary (F&S),
Department of Agriculture and Cooperation,
Krishi Bhavan, New Delhi-1.

3. Dr. T.V. Sampath,
Agriculture Commissioner,
Department of Agriculture Cooperation,
Krishi Bhavan, New Delhi.

4. Shri B.M. Sharma,
Director (CP), TMO, Crops Division,
Department of Agriculture & Cooperation,
Krishi Bhavan, New Delhi-1.

5. Dr. M.A. Patel,
Director,
Gujarat State Seed Certification Agency,
Ahmedabad.

6. Shri Mohd Sathruddin,
Director, Department of Seed Certification,
Tamil Nadu.

7. Shri D.V. Singh,
Managing Director,
M.P. State Seed Certification Agency,
Bhopal.

8. Shri A.K. Basu,
Director,
Central Institute for Cotton Research,
Nagpur.

9. Captain A.S. Randhawa,
Director,
Punjab State Seed Certification Authority,
Chandigarh.

10. Dr. R.N. Subba Reddy,
Director,
A.P. State Seed Certification Agency,
Hyderabad.

11. Shri Basappa Abbigeri,
Director, Karnataka State Seed
Certification Agency,
Bangalore.

12. Shri S.K. Sindhwani,
Director,
Haryana State Seed Certification Agency,
Chandigarh.

13. Shri Hari Krishna,
Director,
U.P. State Seed Certification Agency,
Lucknow.

14. Shri Jugal Kishore,
General Manager (Production),
National Seeds Corporation Ltd.,
New Delhi-12.

15. Dr. S. Lal,
Project Director (Pulses), DPR,
Kanpur.

16. Shri U.R. Murty,
Director,
National Research Centre of Sorghum,
Hyderabad.

17. Dr. P.S. Bhatnagar,
Director,
National Research Centre of Soyabean,
Indore.

18. Shri S.V. Jain,
Additional Director of Agriculture
(Research), Govt. of Rajasthan, Jaipur.

19. Shri G.I. Patel,
Joint Director of Agriculture,
Ahmedabad, Gujarat.

20. Shri M.R. Kamath,
Joint Director of Agriculture (Inputs),
Bangalore.

21. Shri Rampal Malik,
Joint Director of Agriculture,
Haryana, Chandigarh.

22. Dr. Murari Lal,
Joint Director (Agriculture),
Delhi Administration, Delhi.

23. Shri R.S. Arora,
Director, Century Seeds Private Ltd.,
M-1, Anupam Bhavan, Delhi-110033.

24. Shri Ahmad Hussain Khan,
Vill. P.O. Usia, Distt. Ghazipur.

25. Shri K.M. Hooda,
375/16, Hari Niwas, Jhajjar Road,
Rohtak, Haryana.

26. Dr. N.N. Singh,
Project Coordinator (Maize), IARI,
New Delhi.

27. Dr. Kovirupakshappa,
Project Coordinator (Sunflower), UAS,
Bangalore-65.

28. Dr. C.R. Hazra,
Project Coordinator (Forage crops),
I.G.F.R.I., Jhansi.

29. Dr. S.M. Sharma,
Project Coordinator (Sesamum & Niger),
Jabalpur.

30. Dr. P.R. Kumar,
Project Coordinator (Rape Seed &
Mustard), HAU, Hissar.

31. Shri P.K. Agarwal,
    Principal Investigator (Breeding),
    Wheat Project Directorate, IARI,
    New Delhi.

32. Shri H.C. Koralkar,
    Divisional Seed Certification Officer, Pune,
    Maharashtra.

33. Shri A.S. Kataria,
    Senior Scientist,
    Project Directorate of Vegetable.
    IARI, New Delhi.

34. Shri N.S. Tunwar,
    Dy. Commissioner (QC&T),
    Ministry of Agriculture,
    Deptt. of Agri. & Coopn.,
    F/106, Shastri Bhavan, New Delhi-1.

35. Shri C. Shanmugam,
    Asstt. Commissioner (QC&C),
    Ministry of Agriculture,
    Deptt. of Agri. & Coopn.,
    F/110, Shastri Bhavan, New Delhi.

36. Shri M.S. Shukla,
    Dy. Seed Officer (QC), New Delhi.

37. Shri D.S. Mishra,
    STA (Seeds), New Delhi.

38. Shri Nariendra Singh,
    ASO (QC), New Delhi.

39. Shri R.S. Chhonkar,
    T.A. (Seeds), New Delhi.

ANNEXURE II

The details of important features of the Varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 15th Meeting held on 28th February, 1990

1. Crop	:	Cowpea (*Vigna anguiculata* L. Walp.)
Name of the variety	:	Gujarat Cowpea 3
Sponsored by	:	Research Scientist (Pulses), Main Pulses Research Station, Gujarat Agricultural University, Sardar Krushinagar - 385 506.
Parentage with details of pedigree	:	V 16 × Black eye 7-31 Bulk in F_5 generation
Recommended ecology	:	Suitable for Kharif season under low fertility, rainfed conditions
Description of variety		
(a) Plant height		50-55 cm
(b) Distinguishing morphological characters		Broad leaves with dark green foliage early maturity, broad and long pod white seeds with reddish hilum.
(c) Maturity		65-85 days
(d) Maturity group	:	Early
(e) Agronomic features	:	Being an early maturing variety, it is suitable for sole/multiple cropping systems in low fertility rainfed conditions in *Kharif* season. Resistant to pod shattering and pod dropping.
Average yield under normal conditions	.	1200-1400 kg/ha
Agency responsible for maintaining breeder seed	:	Research Scientist (Pulses), Main Pulses Research Station, Gujarat Agril. University, Sardar Krushinagar - 385 506, Dist. Banaskantha (Gujarat).
Specific recommendation, if any, for seed production	:	Because of its early maturity, it should be sown in the second half of July so that pod maturity may not coincide with late rains.

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2. Crop	:	Mungbean (*Vigna radiata* L. Wilczed)
Name of the variety	:	(PDM 54) (MOTI)
Sponsored by		Directorate of Pulses Research, Kanpur - 208 024 (U.P.)

Note.—The detail of the characters of this variety is given in Proceedings of the Eighth Meeting at Annexure No. II (Sl. No. 17).

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3. Crop	:	Forage Sorghum (*Sorghum* × *sudan*)
Name of the variety	:	MFSH-3
Sponsored by	:	XIX AICSIP workshop held at TNAU, Coimbatore from 8 to 10 May, 1989
Parentage with details of its pedigree	:	Female S-31 (Sorghum) Male SG-101 (sudan)
Recommended ecology	:	Recommended for all the forage crop growing regions of the country
Description of Hybrid :		
(a) Plant height	:	Ist cut 220 to 240 cms IInd cut 190 to 210 cms
(b) Distinguishing morphological characters :		
(1) No. of leaves/plant	:	9 to 11
(2) Leaf length in cms	:	70 to 75
(3) Leaf bredth in cms	:	6 to 7
(c) Maturity	:	Ready for first cut at the age of 50 to 55 days i.e. Boot stage. Subsequent cuttings can be taken at an equal interval of 50 to 55 days.
(d) Maturity group	:	Early

Description of Parents of the Hybrid :

		Female (S-31)	*Male* (SG-101)
(a) Plant height	Kharif	125 to 140 cms	165 to 170 cms
	Rabi	140 to 150 cms	180 to 190 cms

(b) Distinguishing morphological characters :			
(1) No. of leaves per plant	:	5 to 6 light green	9 to 10 dark green
(2) Stem	:	Juicy medium with long internodal distance.	very thin and juicy with more number of tillers.
(3) (a) Leaf length	:	60 to 65 cms	50 to 55 cms
(b) Leaf breadth	:	3.75 to 4.0 cms	3.75 to 4.0 cms
(c) Days to 50% flowering	:	Kharif : 65 to 68 Rabi : 70 to 75	70 to 75 70 to 75
(d) Maturity (range in No. of days seed to seed) :			
Kharif	:	100 to 105	110 to 120
Rabi	:	105 to 110	95 to 100
(e) Is there any problem of synchronization and if yes methods to overcome	:	No synchronization problem.	Simultaneous sowing of parental lines gave satisfactory yield.

Average yield under normal condition : Average of (I+II) cuts

(a) Green Fodder yield	:	589.28 Qtls/ha
(b) Dry Fodder yield	:	140.04 Qtls/ha
(c) Green Fodder yield per day	:	6.00 Qtls/ha
(d) Dry Fodder yield per day	:	1.38 Qtls/ha

Agency responsible for maintaining breeder seed : Research Division, Maharashtra Hybrid Seeds Co. Ltd., P.O. Box 27, Jalna - 431 203 (M.S.).

Specific recommendations if any for seed production: Seed production programme could be organised successfully by simultaneous sowings of parent lines.

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4. Crop	:	Guar (*Cyamopsis tetragonoloba* (L) Taub.)
Name of the variety	:	RGC-197
Sponsored by	:	Dr. M.L. Mathur, Plant Breeder (Guar), ARS, Durgapura, Jaipur
Parentage with details of its pedigree	:	Selection from local collection of Nagour district
Recommended ecology	:	Rainy season and well drained soil

Description of variety :

(a) Plant height	:	80 cm - 110 cm
(b) Distinguishing morphological characters	:	Plants are pubescent, unbranched with irregular bearing of clusters on main stem. Flower purple in colour. Seed round, medium bold and grey in colour.
(c) Maturity	:	100-120 days
(d) Maturity group	:	Medium

(e) Reaction to major diseases :

	Grades	
	RGC-197	FS-277
(1) Bacterial blight	2	3
(2) Powdery mildew	2	2
(3) Alternaria leaf	1	1
(4) Spot Rhizochtonia	1	1

Grade 1 : Disease on lower leaves less than 20%
Grade 2 : Disease on lower leaves 20%
Grade 3 : Disease 50% on leaves and 10% on stem

(f) Reactions to major pests	:	No pest was observed under field and store condition
(g) Agronomic features	:	Resistance to lodging/Nonshattering pods
(h) Reaction to stresses	:	Tolerant to drought conditions
Average yield under normal conditions	:	10-18 Qtls/ha
Agency responsible for maintaining breeder seed	:	Plant Breeder (Guar), Rajasthan Agricultural University, ARS, Durgapura, Jaipur.
Specific recommendations, if any for seed production	:	Row to row spacing:30 cm and plant to plant spacing:30 cm should be maintained.

5. Crop : Toria (*Brassica Compestris* var toria)

Name of the variety : PT-507

Sponsored by : Deptt. of Plant Breeding, G.B. Pant University of Agriculture & Technology, Pantnagar.

Parentage with details of its pedigree : Composite 507-B developed from a local population UP 74

Recommended ecology : Normal planting (September) in Eastern Zone as pure crop under rainfed conditions.

Description of variety ;

(a) Plant height : 110-132 cm

(b) Oil content% : 42.95%

(c) Maturity : 86 days from seeding to maturity

(d) Maturity group : Medium maturity group

(e) Reaction to major diseases : Alternaria blight : Tolerant
white rust : Tolerant

(f) Reaction to major pests : Similar to T—9 (National Check)

(g) Agronomic features : PT-507 B is responsive to higher doses of nitrogen and yielded 17%, 12% higher yield at 90 kg N/ha over 30 and 60 kg N/ha.

(h) Reaction to stress : Tolerant to drought (Yielded 17.2% higher than National check, T-9 under rainfed conditions).

Average yield under normal conditions : 6.077 Qtls/ha.

Agency responsible for maintaining breeder seed : G.B. Pant University of Agriculture and Technology, Pantnagar.

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6. Crop : Wheat

Name of the variety : WH 416

Sponsored by : Haryana Agricultural University, Hissar

Parentage with details of its pedigree : WH 147 × UP 368

The variety has wide adaptability, fairly good resistance to rusts and other diseases. The grains are amber fairly bold with 39.5 g weight for thousand grains.

Specific areas of its adaptation : The variety is specifically suitable for early to timely sowing under medium to high fertility irrigated condition throughout North Western Plain Zone (Western Haryana, Rajasthan and Northern parts of Gujarat).

Description of variety ;

(a) Plant height : About 105 cm

(b) Distinguishing morphological characters : Semi dwarf, stiff straw, quick growing green foliage with broad and erect flag leaf, crooked peduncle, white smooth and fugiform spike.

(c) Maturity : Takes about 90 days in heading

(d) Reaction to major diseases : The variety showed fair good resistance to leaf rust under natural condition. Under artificial condition the variety showed less infection than the susceptible variety like Kalyansona, WH 147 but higher infection than the resistant variety WH 283.

(e) Reaction to major pests : No problem

(f) Quality of produce grain/forage/fibre : WH 416 was better than the checks for protein content, pelshenke value, chapati and bread making scores.

Average yield under normal conditions : 40.2 Qtls/ha

Agency responsible for maintaining breeder seed : Department of Plant Breeding, Haryana Agricultural University, Hissar.

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7. Crop : Wheat (*Triticum aestivum* L.)

Name of the variety : KRL 1-4

Sponsored by : Director, Central Soil Salinity Research Institute, Karnal - 132 001.

Parentage with details of its pedigree : Kharchia 65 × WL 711

(i) *Kharchia* 65 is the most salt tolerant wheat variety from Rajasthan derived from cross Kharchia local × EG 953.

(ii) *WL* 711 is the well adaptive and very high yielding variety of Punjab derived from cross (S. 308 × Chris) × Kalyan Sona.

Recommended ecology :	Irrigated timely sown, medium saline/sodic soils (upto pH 9·3 and or EC 5·0 dSm^{-1}) and saline water irrigation upto EC 15-20 dSm^{-1} at 25°C. A little higher dose of N (125 kg/ha) and under highly deteriorated sodic soils application of Zn SO4 @ 25 kg/ha is recommended.
Description of variety :	
(a) Plant height	Single dwarf (65-85 cms)
(b) Distinguishing morphological characters :	
Straw strength	Medium strong
Spikelet sterility .	Highly fertile under normal condition, while tip sterility is noticed under high salt stress.
Glume colour .	White
Threshability :	Easy
Grain texture •	Hard
Grain colour .	Amber
Seed size :	Medium bold
Phenotypic acceptibility :	Excellent, whole plant waxy green
(c) Maturity :	
(i) Heading (days) :	Medium early (72-82)
(ii) Seed to seed :	145-155 days
(d) Maturity group :	Medium group
(e) Reaction to major disease/pests :	No major disease/insect pest caused any damage under natural conditions.
(f) Agronomic features :	It is non-lodging, non-shattering type, responsive to high dose of nitrogen and suitable for timely sown conditions. Seed rate 125 kg/ha is required for salt affected soils. Germination is delayed under salt stress conditions, therefore, timely sowing is essential for wheat crop.
(g) Reaction to stresses :	Germination is unaffected upto pH 9.4 if sown under proper moisture conditions even better than Kharchia 65.
Average yield under normal conditions :	Average yield on large plot basis were recorded 4.1 to 4.9 t/ha under normal soil conditions in station trials of different years.
Agency responsible for maintaining breeder seed :	Director, CSSRI, Karnal - 132 001.

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8. Crop :	Wheat (*Triticum aestivum*)
Name of the variety :	HDR-77
Sponsored by :	Director, Indian Agricultural Research Institute, New Delhi - 110 012
Parentage with details of pedigree :	(Partizanka × HD 2204) HD 2204 the variety was developed by crossing Partizanka, a winter wheat variety with spring wheat variety HD 2204 and making a backcross with HD 2204. Single plants selection was practised till the progeny was homozygous.
Recommended ecology :	Rainfed, Late sown, particularly after the harvest of paddy
Description of the variety :	
(a) Plant height :	65-86 cms
(b) Distinguishing morphological characters :	Single gene dwarf, a little shorter than Sonalika, early to medium, early maturity, about a week later than Sonalika, White mid dense fully bearded, non-waxy heads.
(c) Maturity :	Seeding to flowering 60-79 days Seed to Seed, 95-105 days
(d) Maturity group :	Early
(e) Reaction to major diseases :	Highly resistant to all the three rusts of wheat under field and controlled conditions.
(f) Reaction to major pests :	Under field condition, tolerant to Aphids and Brown wheat mite but at par with Sonalika with respect to Shootfly. For storage pests, as susceptible as Sonalika Check under controlled conditions.
(g) Agronomic features :	Resistant to lodging nonshattering highly response to fertilizer, suitable for late sowing.
Average yield under normal conditions :	Range and average over four years Range : 1620-2900 kg/ha Average : 1980 kg/ha.
Agency responsible for maintaining breeders seed :	Division of Genetics, Indian Agril. Research Institute, New Delhi - 110 012.

9. Crop : Maize (*Zea mays* L.)

Name of the variety : DHM 105 (EH 40184)

Sponsored by : All India Co-ordinated Maize Improvement Project (AICMIP) and A.P. Agricultural University.

Parentage with details of its pedigree : E.H. 40184 is a full-season double cross hybrid with orange yellow semi dent bold seed (CM 119 × CM 120) × (CI 21 (E) ×X 108).

Recommended ecology : For cultivation during Rabi season

Description of hybrid:

(a) Plant height : 202 cms

(b) Distinguishing morphological characters :
- Ear height : 90 cm
- Tassel : Open and medium open heavy
- Glumes : Green with purple tinge
- Anthers : Light purple
- Silks : Predominantly green
- Cob : Purple and long
- Ear : It is filled fully covered by husk
- Grain type and colour : Bold semi-dent seed with orange yellow colour

(c) Maturity : On an average it takes 72 days (Hyd.) and 106 days (All India) to 50% silking.

Crop matures in 108 days (Hybrid) and 145 days (All India) average i.e., day to 50% dry husk.

(d) Maturity group : Full-season Maturity

(e) Reaction to major diseases : E.H. 40184 is equally or more tolerant to *Helminthosporium turcicum, Macrophomina phaseolina, S. sorghi, Fusarium stalk rot* and *Late wilt* when compared to the checks, as worked out from the breeding trials (Natural conditions) and pathology trials (artificial conditions/controlled conditions)

(f) Reactions to major pests : E.H. 40184 showed better resistance to stalk borer (*Sesamia inferens*) and thrips over checks DHM 103 & MCU-204.

(g) Agronomic features :

(i) E.H. 40184 is as tolerant or more tolerant to root lodging (%) and stem breakage.

(ii) Fertilizer (N) responsiveness showed a positive upto 180 kg N. E.H. 40184 was found to be superior by 11.5% and 35.4% increased yield over the standard check DHM 103 and MCU 204; respectively at 180 N across the zones and years indicating the desirable, positive responsiveness of the proposed hybrid for increased levels of Nitrogen.

(h) Reaction to stresses : Moderately tolerant to water stress

Description of parents of the hybrid:

	Parental lines			
	CM 119	*CM* 120	*CI* 21 (*E*)	*X* 108
(a) Plant height (cm)	177	165	168	158
(b) Ear height (cm)	76	70	71	65
(c) Days to 50% pollen shed	67	68	69	70
(d) Days to 50% silk	70	71	72	74
(e) Maturity (days to 50% dry husk)	104	104	106	107

(f) Distinguishing characters :

	CM 119	*CM* 120	*CI* 21 (*E*)	*X* 108
Tassel	Semi compact	Loose	Semi compact	Loose
Glume	Green with purple tinge	Purple	Green with purple tinge	Green
Anthers	Yellow	Purple	Yellow	Yellow
Silk	Predominantly green	Predominantly green	Predominantly green	Predominatly green
Cob	Purple	White	Light purple	Purple
Grain	Orange yellow flint	Orange yellow flint	Yellow dent	Orange flint

Single crosses **:**

	CM 119 × *CM* 120	*CI* 21 (*E*) × *X* 108
(a) Plant height (cm)	210	207
(b) Ear height (cm)	88	87
(c) Days to 50% pollen shed	68	69
(d) Days to 50% silk	71	73
(e) Maturity (days to 50% dry husk)	105	107

(f) Distinguishing characters :	*CM* 119 × *CM* 120	*CI* 21 (*E*) × *X* 108
Tassel	Semi compact	Semi compact
Glume	Green with purple tinge	Green with purple tinge
Anthers	Light purple	Yellow
Silk	Predominantly green	Predominantly green
Cob	Purple	Light purple
Grain	Orange yellow flint	Yellow semi dent

(g) Any problem of synchronization : There is no problem of synchronization.

Average yield under normal conditions : 6685 kg/ha

Agency responsible for maintaining breeder seed : Maize Breeder, Agricultural Research Station, Amberpet, Hyderabad-500 013.

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10. Crop : Maize (*Zea mays* L.)

Name of the variety : VARUN (Synthetic B-41)

Sponsored by : All-India Co-ordinated Maize Improvement Project (AICMIP) and A.P. Agricultural University

Parentage with details of its pedigree : It is the result of chain crossing of 10 selected inbreds (5 inbreds selected based on low chlorophyll stability index (C.S.I.) and low frequency of stomata and the remaining 5 on the basis of high 100 grain weight and high yield potential)

Recommended ecology : For cultivation during Kharif season.

Description of variety **:**

(a) Plant height : Medium to tall (170-190 cm)

(b) Distinguishing morphological characters :

Leaf : Dark green, semi dent

Tassel : Open and Loose

Glume : Predominantly green

Anthers : Predominantly yellow

Silk : Predominantly green

Husk : Green tight husk cover

Cob colour : Predominantly white

Grain texture : Medium bold semi flint

Grain colour : Orange yellow

(c) Maturity : 90 to 100 days

(d) Maturity group : Medium 'B' maturity

(e) Reaction to major diseases : Equally or rare tolerant to checks for *H. turcicum* and *H. maydis* in both zones I and IV is equally or more tolerant than checks, over Sorghum downy mildew (%) and Late wilt (1-9) in Zone IV.

(f) Reactions to major pests : Tolerant to Chilo partellus

(g) Agronomic features : (i) Equally tolerant to root lodging & stem br J-684).

Seed rate : 20 kg per Hec. Drought resistant

(h) Quality of produce of grain/forage :

Grain : Medium bold, orange yellow semi-

Forage : Stalks are medium tall and provide

	(i) Reaction to stresses	Moderately tolerant to waterstress
	Average yield under normal conditions	4100 kg/ha.
	Agency responsible for maintaining breeder seed	Maize Breeder, Agricultural Research Station, Amberpet, Hyderabad-500 013.

11.	Crop	Maize (*Zea mays* L.)
	Name of the variety	Madhuri
	Sponsored by	All India Co-ordinated Maize Improvement Project (AICMIP) and A.P. Agricultural University.
	Parentage with details of its pedigree	It is the result of simple recurrent selection in the introduced variety of 'Florida Sweet Corn' later crossed with E.V. B-21 (BFS 2), followed by back crossing with selected sweet corn families.
	Recommended ecology	For cultivation allround the year.
	Description of variety :	
	(a) Plant height	Medium (160-175 cm)
	(b) Distinguishing morphological characters	Leaf : Light green Tassel : Open and medium compact Glume : Green Anthers : Cream Silk : Green Husk : Green with tight husk cover Cob colour : White Grain texture : Light small and deep dent Grain colour : Yellow
	(c) Maturity	On an average, Sweet corn takes 50-55 days and 55-60 days to 50% flowering in Kharif and Rabi, seasons respectively. Green cobs will be ready after 75-80 days in Kharif and 80-85 days in Rabi.
	(d) Maturity group	Early maturity
	(e) Reaction to major diseases	Sweet corn is a special short duration variety hence diseases like charcoal rot, late wilt and other stalk rots can be escaped because of its earliness.
	(f) Reactions to major pests	Sweet corn is moderately tolerant to major pests.
	(g) Agronomic features	In the agronomy experiments conducted at Amberpet Sweet corn is found to be more responsive to 120 kg N. It is also found to be suitable for early as well as late sown conditions. The seed rate is 3.5 to 4.0 kg per acre because of its low test weight.
	(h) Quality of produce of grain/forage	Grain : Light, yellow and deep dent. The quality aspect of sweet corn is found to be far superior in comparison with other varieties at green as well as matured grain stage.
	(i) Reaction to stresses	Moderately tolerant to water stress.
	Average yield under normal conditions	1,665 kg/ha
	Agency responsible for maintaining breeder seed	Maize Breeder, Agricultural Research Station, Amberpet, Hyderabad-500 013.

12.	Crop	Chewing tobacco (*N, tabacum* L.) Pusa-76
	Name of the variety	(HP 76-1)
	Sponsored by	Director, Central Tobacco Research Institute, Rajanmundry.
	Parentage with details of its pedigree	F_2 : (Sonax HP 66-1) (Sonax HP 66-1) = A Selection 9 × Selection 1 × F_2 : (B.K. Rajwa × G. Bahar) × G.Bahar = B HP 76-1
	Recommended ecology	Non-saline Calcarious sandy loam soils of North Bihar
	Descripition of variety:	
	(a) Plant height	Untopped : 2.0 to 2.2 m Topped : 0.4 to 0.5 m
	(b) Distinguishing morphological characters	(i) Semi open, long & broad leaves with pointed tips (ii) Leaves light green in colour (iii) Profuse spangling and puckering.

(c) Maturity : Seeding to tansplanting 45-55 days. Transplanting to flowering=80-90 days, seed to seed=190 to 200 days.

(d) Maturity group : Medium (125 - 135 days)

(e) Reaction to major diseases : Resistant to diseases (Mosaic leef curl and leaf spot) as compared to check variety Sona under natural conditions.

(f) Reaction to major pests : Nothing special and comparable to the other local ruling varieties in vogue.

(g) Quality of produce : Cured leaves have dark brown colour with sufficient gumminess and elasticity, full of white incrustations on leaf surface, good aroma & satisfactory chewing strength.

Average yield under normal conditions : Total cured leaf yield : 2633 kg/ha
First grade leaf yield = 1728 kg /ha

Agency responsible for maintaining breeder seed : Plant Breeding Section of CTRI Research Station, Pusa.

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13. Crop : Indian mustard (Raya) (*Brassica juncea* (L) Coss)

Name of the variety : RL 1359

Sponsored by : Punjab Agricultural University, Ludhiana - 141 004 (Punjab).

Parentage with details of its pedigree : RLM 514 × Varuna

Recommended ecology : Grows well in areas having 25 to 40 cm of rainfall, on well drained, light to medium textured soils.

Description of the variety:

(a) Plant height : Approximately 133 cm (from the base to the tip of the main shoot of the plant).

(b) Distinguishing morphological characters : The leaves are comparatively small, dark green, smooth and formf a narrow angle with the main stem. It has a thick stem with less number of primary and secondary branches. The plant type is erect and resistant to lodging. It is shorter in stature than PLM 619 (35 cm), Varuna (30 cm) and Kranti (43 cm). It takes about 48 days to 50% flowering and 147 days to maturity Siliquae are long, flattered with hard chaff which provides resistance to shattering 1000 - seed weight is 6.6 g with 43% oil content.

(c) Maturity days : 147 days

(d) Maturity group : Medium

(e) Reaction to major diseases : Major diseases like Alternaria blight and white rust the variety RL-1359 is at par with the standard varieties used as checks (Varuna, Kranti & RLM-619).

(f) Reaction to major pests : The major pest is Aphid. The population of mustard aphid on RL 1359 at par with RLM-619 and considerably lower than that of varuna and Kranti

Average yield under normal conditions : 1752 kg/ha

Agency responsible for maintaining breeder seed : Oilseed Section, Department of Plant Breeding, PAU, Ludhiana.

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14 Crop : Onion (*Allium cepa*)

Name of the variety : Arka Niketan (Sel. 13)

Sponsored by : Indian Institute of Horticultural Research, Ressaraghatta Lake P.O., Bangalore - 560 089.

Parentage with details of its pedigree : IHR 153 (a collection from Maharashtra) IHR 153-6-3-1-2-1

Recommended ecology : (1) Sub-humid Sutlej Ganga alluvial plains
(2) Semi-arid lawa plateau and Central high lands
(3) Humid to semi-arid western ghats and Karnataka plateau

Description of variety:

(a) Plant height : 60—83 cms

(b) Distinguishing morphological characters : Bulbs, red coloured, globe shape, thin neck, single centre medium large bulbs bulb weight 100-180 g very hard texture high TSS (13%) excellent storage qualities with very little sprouting losses during storage bulbs can be stored for 6 months at room temperature.

(c) Maturity : 145 days from sowing in nursery till the maturity of the bulbs

(d) Maturity group : N.A.

(e) Reaction to major diseases/pests : Not bred for disease resistance

Average yield under normal conditions : 42000 kg per hectare

Agency responsible for maintaining breeder seed : IIHR, Bangalore.

15. Crop	Onion (*Allium cepa*)
Name of the variety	Arka Kalyan (Sel. 14)
Sponsored by	Indian Institute of Horticultural Research, Bangalore.
Parentage with details of its pedigree	IHR 145 (A collection from Maharashtra) IHR 145-4-2-1-1-2
Recommended ecology	(1) Sub-humid Sutlaj Ganga alluvial plains (2) Arid Western plains (3) Semi arid and lawa plateau and central high lands (4) Humid to semi-arid western ghats and Karnataka plateau
Description of variety :	
(a) Plant height	67.23 cms
(b) Distinguishing morphological characters	Bulbs-deep red, globe shape, thin neck, single centre, medium large size, bulb weight 100-190 g.
(c) Maturity	140 days from sowing in nursery till the maturity of the bulbs seed to seed one year.
(d) Maturity group	N.A.
(e) Reaction to major diseases	Moderate resistance to purple blotch disease, under field conditions
Average yield under normal conditions	47000 kg per hectare
Agency responsible for maintaining breeder seed	IIHR, Bangalore - 80.

16. Crop	Pumpkin (*Cucurbita moschata*)
Name of the variety	Arka Chandan (IIHR 105-1-1)
Sponsored by	Indian Institute of Horticultural Research, 255, Upper Palace Orchards, Bangalore - 80.
Parentage with details of its pedigree	IIHR 105 - a collection from Rajasthan, developed by pure line breeding method.
Recommended ecology	Humid to semi-arid western ghats and Karnataka plateau
Description of variety	
(a) Plant height	350 cm long trailing vines
(b) Distinguishing morphological characters	(1) Vigorous vines bearing 2 to 3 fruit/plant (2) Fruit round with flat blossom end, light green with white spots when immature, turns brown on maturity. (3) Leaves devoid of silver white patches (air pockets) (4) Small seeds with or without ridges on testa
(c) Maturity	115 to 120 days from sowing to harvest
(d) Reaction to major diseases	Downy mildew can be controlled easily by regular plant protection measures.
(e) Reaction to major pests	Major pests can be easily controlled following regular plant protection measures.
(f) Agronomic features	Responds positively to 100 kg N, 100 kg P_2O_5 and 70 kg K_2O. Seed rate : 1 kg/ha.
Average yield under normal conditions	325 Qtls/ha
Agency responsible for maintaining breeder seed	IIHR, Hessaraghatta, Bangalore.
Specific recommendation, if any for seed production	Curing of fruit for a period of 25-30 days after harvest

17. Crop	Watermelon (*Citrullus lanatus*)
Name of the variety	Arka Manik
Sponsored by	Indian Institute of Horticultural Research, 255, Upper Palace Orchards, Bangalore - 560 080.
Parentage with details of its pedigree	IIHR-21 × IIHR-4 (Sel. from Raj) (Crimson sweet) F_1 F BC3 BC_2 S_7 (Arka Manik)
Recommended ecology	(i) Subhumid, Satluj Ganga alluvial Plain, Semi-arid Lava Plateau and Central high lava. (ii) Humid and semi-arid western ghats and Karnataka Plateau

Description of variety :	
(a) Plant height	350 cm trailing vines
(b) Distinguishing morphological characters	(i) Vigorous vines bearing round to oval fruit having light green to green stripes. (ii) Small seeds with dark brown specks on the testa
(c) Maturity	110-115 days from seedling to final harvest of the crop
(d) Reaction to major diseases	Triple disease resistance to Anthracnose, powdery mildew and Downy mildew diseases.
(e) Reaction to major pests	Can be controlled easily through regular plant protection schedules
(f) Agronomic features	Responds positively to NPK (150 : 100 : 70 kg/ha)
Average yield under normal conditions	550-600 Qtls/ha
Agency responsible for maintaining breeder seed	IIHR, Hessaraghatta, Bangalore
Specific recommendations, if any, for seed production.	Seed yield only 100 kg/ha needs higher procurement price for seed

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18. Crop	French Bean (*Phaseolus vulgaris* L.)	
Name of the variety	Arka Komal (Sel. 9)	
Sponsored by	Indian Institute of Horticultural Research, Hessaraghatta Lake P.O., Bangalore - 560 089.	
Parentage with details of its pedigree	IHR 60 - A collection from Australia	
Recommended ecology	(1) Humid western Himalayan region	U.P. & H.P. (hilly regions)
	(2) Semi-arid lava plateau and central high lands.	Maharashtra
	(3) Humid semi-arid western ghats and Karnataka Plateau.	Karnataka
Description of variety		
(a) Plant height	50 cms	
(b) Distinguishing morphological characters	Pods tender, green long, straight, flat, and fleshy. Seeds are buff or brownish buff, oblong and bold.	
(c) Maturity	65-70 days seed to seed	
(d) Reaction to major diseases	Can be controlled by spraying fungicides	
(e) Reactions to major pests	Can be controlled by timely spray of insecticides	
(f) Agronomic features	Responds positively to NPK (50 : 80 : 40 kg/ha)	
Average yield under normal conditions	15,000 kg/ha	
Agency responsible for maintaining breeder seed	IIHR, Bangalore	

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19. Crop	Tomato (*Lycopersicon esculetum*)
Name of the variety	Arka Vikas (Sel. 22)
Sponsored by	Indian Institute of Horticultural Research, 255, Upper Palace Orchards, Bangalore - 560 080.
Parentage with details of its pedigree	Pure line selection from 'Tip Top' through 3 generations of single plant selections followed by 3 generations of massing.

Recommended ecology :

Zones	*States*	*Centres*
(1) Humid western Himalayan region	H.P.	Solan
(2) Humid Bengal-Assam basin	W. Bengal	Kalyani
(3) Sub-humid Sutlej Ganga Alluvial plains	Bihar, Punjab, U.P.	Ranchi, Ludhiana, Kalyanpur, Pantnagar.
(4) Sub-humid to humid eastern and south eastern uplands.	Orissa	Bhubaneshwar
(5) Arid western plains	Gujarat	Navsari
(6) Semi-arid lava plateau and Central highlands	Maharashtra	Rahuri, Ambajogai
Humid to semi-arid western ghats and Karnataka plateau.	Karnataka	Hessaraghatta

Description of variety :	
(a) Plant height	75 cm
(b) Distinguishing morphological characters	Semi-determinate habit, vigorous, very good foliar canopy, fruits red, oblate large, no green shoulder.
(c) Maturity	140 days (seedling to last harvest)
(d) Reaction to major diseases/pests	Major diseases can be controlled by recommended spray schedules
(e) Agronomic features	Responds positively to NPK. (120 : 80 : 50 kg/ha)
Average yield under normal conditions	38 t/ha
Agency responsible for maintaining breeder seed	Indian Institute of Horticultural Research, Bangalore
Specific recommendations, if any, for seed production	To rogue out ribbed fruits and maintain uniformity in fruit size. Seed rate 250 gms/ha.

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20. Crop	Chickpea *(Cicer arietinum)*
Name of the variety	GL 83119 (PBG 1)
Sponsored by	Department of Plant Breeding, Punjab Agricultural University, Ludhiana-141 004.
Parentage with details of pedigree	Developed from the cross GG 578 × NEC 206 by pedigree method followed by early generation bulking. GG 578 is an advance generation breeding line with high yield. NEC 206 is a black seeded germplasm line with high degree of resistance to Ascochyta blight.
Recommended ecology	Suitable for both rainfed and irrigated conditions
Description of variety :	
(a) Plant height	46-79 cm with mean of 63 cm
(b) Distinguishing morphological characters	Plants are tall with erect growth habit and fruiting branches are long. 100 seed weight is 13 g. Seeds are brown. It has high degree of resistance to gram blight. Resistance to wilt complex is either better or as good as the best check.
(c) Maturity	Range 126 - 179 days Mean 156 days
(d) Maturity group	Late maturity group
(e) Reaction to major diseases	(i) *Ascochyta blight* GL 83119 had the highest degree of tolerance to gram blight under artificial conditions than the national checks. (ii) *Wilt Complex* GL 83119 was superior to C235, BG 261 and GNG 146 (iii) *Botrytis* Variety GL 83119 had a slight edge over the checks (iv) *Alternaria blight* GL 83119 recorded score of 2.0 against scores 5, 5, 7 and 6 of checks C 235, GNG 146, H 75-35 and BG 261, respectively.
(f) Reaction to major pests	Reactions of GL 83119 to pod borer was relatively less than that in C 235
(g) Agronomic Features	Suitable for timely sowing. However it has also shown promising results under late sown conditions.
(h) Quality of produce of grain/forage/fibre	(i) Grains : Brown (ii) Protein content : 24.6% (iii) Hard grains : Nil
(i) Reaction to stresses	Has sown promise under late sown conditions and biotic stresses (gram blight, wilt complex, alternaria blight).
Average yield under normal conditions	1600 kg/ha on farmer's fields under normal conditions
Agency responsible for maintaining breeder seed	Department of Plant Breeding, Punjab Agricultural University, Ludhiana-141 004.
Specific recommendations, if any, for seed productions	In relatively heavy soils, its sowing should be delayed by 7-10 days to avoid excessive vegetative growth and lodging. Seed treatment with Bavistin + Thiram (1 : 3) or Captan @ 3 g per kg seed is useful.

21. Crop : Oat (*Avena sativa* L.)

Name of the variety : UPO 212

Sponsored by : G.B. Pant University of Agri. and Tech., Pantnagar, Distt. Nainital (U.P.)

Parentage with details of its pedigree : US 1492 × Kent entered as : (US 1492 × Kent)-2-2-$_1F^8$

Recommended ecology : Sub tropical to temperate

Description of variety :

(a) Plant height : 110-125 cm at full heading

(b) Distinguishing morphological characters : Juvenile growth semi-erect, light green stem and foliage; 8-10 tillers, leaves mid-sized, broad and drooping, panicles 30-35 cm long, 35-40 branches with 70-80 spikelets per panicle; lemma yellowish at maturity; panicles loose and unilateral, variable awns present.

(c) Maturity : 150-160 days from seed to seed

(d) Maturity group : Late

(e) Reaction to major disease : Resistant to crown rust and leaf blight diseases including smut under field conditions.

(f) Reaction to major pests : Resistant to common fields pests including stored grain weevil under natural conditions.

(g) Agronomic features : Resistant to lodging as it is multicut, resistant shattering, fertilizer responsive before and after first cut for more forage production, suitable for early to late sown conditions, seed rate 100 kg/ha for forage production, 70 kg/ha for seed production.

(h) Quality of produce of grain, forage/fibre : High in crude protein yield and better in acceptability and digestibility under multicult system.

Average yield under normal conditions : 400-450 kg/ha of green forage yield.

Agency responsible for maintaining breeder seed : G.B. Pant University of Agril. and Tech., Pantnagar (U.P.)

Specific recommendations, if any, for seed production: For good quality seeds having plump and large kernels it is suggested to grow the crop without cut in seed production.

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22. Crop : Paddy (*Oryza sativa* L.)

Name of the variety : Shaktiman (IET-7316)

Sponsored by : Director, CRRI, Cuttack

Parentage with details of its pedigree : IET 7316 is a selection from the cross of CR 94-1512-6 × Pusa 2-21 with pedigree No. CR 404-24.

Recommended ecology : Un-submergible medium lands

Description of variety :

(a) Plant height : Semi-dwarf, 90-95 cms

(b) Distinguishing morphological characters : Semi-dwarf habit, all parts green, dark green leaves, short bold grains with white kernel, nonlodging habit, early duration, gall midge resistant.

(c) Maturity : Germination to 50% flowering 90 days Total duration : 120 days

(d) Maturity group : Early

(e) Reaction to major diseases : Resistant to RTV, tolerant to blast

(f) Reactions to major pests : Resistant to rice gall midge, GLH and moderately resistant to BPH & WBPH

(g) Agronomic features : Non-lodging, non-shattering, response to high dose of nitrogen. Suitable for late planting. Seed rate-40 kg/ha (For transplanting).

(h) Reaction to stresses : Withstands gall midge attack. Tolerant to moisture stress

Average yield under normal conditions : 3.5 to 4.5 tons/ha under unprotected conditions

Agency responsible for maintaining breeder seed : Central Rice Research Institute, Cuttack - 753 006 (Orissa)

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23. Crop : Pumpkin (*Curcurbita moschata* Duch. ex. poir)

Name of the variety Pusa Vishwas (Sel. 107)

Sponsored by Indian Agricultural Research Institute, New Delhi - 110 012

Parentage with details of its pedigree : A sample packet seed was collected from Sabzi Mandi, Delhi. in breeding and individual plant Selection was done to purify and select the line Sel. 107

Recommended ecology	It is suitable for growing in Humid Western Himalayan region sub-humid Sutlej Ganga Alluvial plains, Sub-humid to humid eastern and south-eastern uplands and Humid to semiarid western ghats and Karnataka plateaux.
Description of the variety :	
(a) Plant height	Average plant (Vine) length—4.5 m.
(b) Distinguishing morphological characters	Vigorous Vegetative growth, leaves 5 lobed, surface of leaves non-hirsute and soft in texture white spots or etiolated appearance on the surface of the leaves. Fruits spherical, medium in size, Av. fruit weight 5 kg, peduncle smoothly five angled and expanded or flared at the attachment. Flesh deep golden-yellow.
(c) Maturity	It takes 120 days from sowing to harvest its mature fruits.
(d) Maturity group	It comes under early maturity group.
(e) Reaction to major disease	No major disease problem was encountered.
(f) Reaction to major pests	Less effected.
(g) Agronomic features	Suitable for growing in early spring summer season. Four kg seed is required to sow one hectare field.
(h) Quality of produce of grain forage/fibre	Fruit Flesh is thick and deep golden-yellow which is rich in carotene a precurser of Vitamin A. Its Fruit can be stored for 4-5 months at room temperature without and deterioration in quality.
(i) Reaction to stresses	It can give fairly good harvest under some low stress conditions like low fertility level.
Average yield under normal conditions	35000 kg/ha.
Agency responsible for maintaining breeder seed	Division of Vegetable Crops, I.A.R.I., New Delhi-110012.
Specific recommendation, if any, for seed production	Seed Production is easy and economical and there is no specific requirement for its seed production except proper isolation distance as required for any variety of cucurbita vegetable.

24. Crop	Groundnut (*Arachis hypogaea*)
Name of the variety	ICGV 87119 (ICGS 1)
Sponsored by	ICRISAT
Parentage with details of its pedigree	(Robust 33-1)-7-4-B_1 B_1 -B_1 -B_1 -B_1 -B_1 -B_1 -B_1 -B_1 -B_1 (A selection from natural hybrid population)
Specific areas of its adaptation	Rainy season, Zone I (Haryana, Punjab, UP, Bihar, Rajasthan)
Description of the variety :	
Cultivar group	Spanish
(i) Growth habit	Decumbent 2-Decumbent 3
(ii) Branching pattern	Sequential
(iii) Plant height and breadth	15.2 cm, 33.3 cm (Post rainy season, 1987/88, ICRISAT Center).
(iv) Pigmentation	Green
(v) No. of primary and secondary branches	4-5, 2-4
(vi) Leaf character :	
(a) Size	Medium-small
(b) Shape	Elliptic
(c) Colour	Dark green
(vii) Flower colour :	
(a) Standard	Orange
(b) Cresent	Yellow
(c) Crescent marking	Garnet
(d) Wing petal	Yellow
(viii) Pod and seed characters :	
(a) Pod beak	Absent-slight
(b) Pod constriction	Slight-moderate
(c) Pod reticulation	Smooth-slight

(d) Pod ridge : Absent
(e) Seeds/pod : 2-1
(f) Pod length : 24 mm (average of 20 two-seeded pods, rainy season, 1988, ICRISAT Center)·
(g) Pod breadth : 12 mm (Average of 20 two-seeded pods, rainy season, 1988 ICRISAT Center).
(h) Shelling percentage : 70.0 (65.1-71.7)
(i) Seed length : 12 mm (Average of 20 seeds, rainy season, 1988, ICRISAT Center).
(j) Seed breadth : 8 mm (Average of 20 seeds, rainy season, 1988, ICRISAT Center).
(k) 100-seed mass : 35 g
(l) Seed color : Tan

(ix) Quality traits :
(a) Oil (%) : 51.4 (49.7-53.3)
(b) Protein (%) : 21.5 (rainy season, 1987, ICRISAT Center).

(x) Reaction to pests and diseases :
(a) Rust and leaf spot : Less susceptible
(b) Insect pests : Less susceptible
(c) Reaction to bud necrosis disease : Less susceptible

(xi) Agronomic features :
(a) Lodging : Not applicable
(b) Drought : Average recovery
(c) Adaptability : Rainy season, Zone 1.
(d) Spacing : 30 cm × 15 cm.
(e) Plant population : 330,000/plants ha^{-1}
(f) Fertilizer : 20 N : 40 P_2O_5 : 20 k_2O ha^{-1}
(g) Seed rate : 115 kg ha^{-1}

(xii) Quality of produce : Two-seeded attractive pods with tan color seeds, oil quality better than JL 24.

Average yield under normal conditions : 2527 kg/ha.
Agency responsible for maintaining breeder seed : ICRISAT, Patancheru P.O. 502 324, Andhra Pradesh.

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25. Crop : Groundnut (*Arachis hypogaea* L.)
Name of the variety : ICGV 87160 [ICG (FDRS)-10]
Sponsored by : ICRISAT.
Parentage with details of its pedigree : (Ah. 65 × NC Ac(17090) F_2-B_1-B_1 B_2-B_1-B_1-B-$_1$-B_2
Recommended ecology : Areas where rust and late leaf spots prevail.

Description of the variety :
(a) Plant height : Medium

(b) Distinguishing morphological characters :
(i) Cultivar group : Natal
(ii) Growth habit : Erect
(iii) Branching pattern : Sequential
(iv) Pigmentation : Green
(v) Number of primary branches : 4 (Average of 20 plants)
(vi) Number of secondary branches : 0.2 (Average of 20 plants)
(vii) Plant height : Medium
(viii) Maturity (rainy season) : 105-124 days (Mean 115).

(ix) Leaf characters :

(a) Size : Medium

(b) Shape : Elliptic

(c) Color : Green-dark green

(x) Flower color :

(a) Standard : Orange

(b) Crescent : Yellow

(c) Crescent marking : Orange

(d) Wing petal : Yellow

(xi) Pod and seed characters :

(a) Pod beak : Absent-slight

(b) Pod constriction : Absent-slight

(c) Pod reticulation : Moderate

(d) Ridge : Moderate-Prominent

(e) Seeds per pod : 2—1—3 (mainly 2—seeded)

(f) Pod length : 25.7 mm (average of 30 pods, rainy season, 1987, ICRISAT Center).

(g) Pod breadth : 14.2 mm (average of 30 pods, rainy season, 1987, ICRISAT Center).

(h) Shelling (%) : 67.3 (59.2-80).

(i) Seed length : 12.7 mm (average of 30 seeds, rainy season, 1987, ICRISAT, Center).

(j) Seed breadth : 7.5 mm (average of 30 seeds, rainy season, 187, ICRISAT Center.)

(k) 100-seed weight (g) : 36.1 (25.3-43.0)

(l) Seed color : Tan

(c) Maturity group : Medium

(d) Reaction to major diseases:

(i) Rust : Highly resistant

(ii) Late leaf spot : Tolerant

(iii) Bud necrosis disease : Field tolerant

(iv) Peanut mottle virus (under artificial inoculation) : Tolerant

(v) Stem and pod rots (sclerotium rolfsii) : Tolerant

(e) Reaction to major pests :

(i) Groundnut leafminer : Less susceptible than national varieties.

(ii) Reaction to other insects : Similar to other national varieties

(f) Agronomic features :

(i) Drought : Can tolerate mid-season stress

(ii) Adaptability : Suitable for kharif season in the penisular zone where rust and late leaf spot diseases are a problem.

(iii) Seed rate : 120 kg ha^{-1} (100 seed wt. 36 g).

(g) Quality of produce of grain forage/fibre:

(i) Oil content of seed % : 47.8 (51.1-44.1)

(ii) Protein content of seed (%) : 26.6 (28.5-25.1)

(iii) Fodder value : Being a foliar diseases resistant variety produces better fodder both qualitatively and quantitatively.

(h) Reaction to stresses : Can tolerate mid-season drought.

Average yield under normal conditions : 2500-4200 kg/ha. (Rainy season)

Agency responsible for maintaining breeder seed : ICRISAT, Patancheru P.O. 502 324, Andhra Pradesh.

Specific recommendations, if any, for seed production : It is preferable to select a field which was not under groundnut cultivation at least for two years.

ANNEXURE III

Important features of the Varieties recommended for Notification in the 15th Meeting of Central Sub-Committee on Crop Standards, Notification and Release of Varieties

1. Crop : Bajra (*Pennisetum typhoides*) (Burm)

Name of the variety : HHB 67

Parentage with detail of its pedigree : MS 843A × H77/833-2

Breeder/Institute responsible for maintaining Breeder's stock : HAU/ICRISAT

Description of Hybrid :

Plant height : Medium

Distinguishing morphological characters : Thin stem, medium narrow leaves, typical conical ear head, medium bold seed size & extra early in maturity.

Maturity : 40±2 days (Seed to 50% flowering) 60±2 days (Seed to Seed)

Maturity group : Extra early

Reaction to major diseases : Highly resistant to downy mildew both under field and as well as sick plot conditions.

Agronomic features (i.g., resistance to lodging, shattering fertilizer responsiveness suitability for early or late sown condition) : Resistant to lodging & shattering, Fertilizer responsive: suitable for early normal & late planting.

Quality of produce grain forage/fibre including nutritive value, where relevant : Very good.

Reaction of Stresses : Highly tolerant to moisture stress.

Description of the parents of the hybrid :	*Female* MS 843A	*Male* H 77/833-2
Plant height (cm)	Dwarf (70-110)	Medium dwarf (100-160)
Tillering	High	High with high nodal tillers
Stem thickness	Medium thick	Thin
Leaf : (a) Size & shape	Medium, medium broad	Small narrow & thin
(b) Colour	Dark green	Light green
Ear : (a) Length	Medium (19 cm)	Small thin (13 cm)
(b) girth	Thick loose	Thin dense
Grain size :	*Female* Bold	*Male* Small
Seed set under different environments :	No problem	No problem
50% flowering (days) :	40-55	40-52
Pollen shedders :	No problem	—

Synchrony in flowering : In general, no problem is visualised. However, the male parent namely H77 833-2 may flower late by seven days under certain environmental conditions.

Reaction to major diseases under field & controlled conditions : (HAU Sick plot data)

Disease	*MS843A*	*H77/833-2*
Downy mildew	0—4.4	5.6-6.6
Ergot	0—6.7	0·0
Smut	13.0—24.5	7.0—12·0

Identifiable and distinguishable morphological characteristics of the Hybrid : Extra early maturity, thin stem medium narrow leaves, typical conical ear head, medium bold seeds photothermo insensitive.

Maturity group : Extra early

Disease and pest resistance : Highly resistant to downy mildew both under field as well as sick plot conditions in states of Haryana, Rajasthan, Punjab, Gujarat, Tamil Nadu, M.P. & parts of Maharashtra.

Recommended ecology : For general cultivation both in drought prone areas as well as high rainfall.

Yield (kg/hect.) *:*

(a) Commercial : 2837 kg/ha.

(b) Seed : 1000 kg/ha.

2. Crop : Fodder bajra

Name of the variety : Raj. Bajra Chari-2

Parentage with detail of its pedigree : This variety was developed by two cycles of full sib selection in a population created through random mating among 20 crosses of four inbreds (originating from West Africa) namely MMP 7105-1, 71083-8, 7413-1-2 & 7145-5 with five.

Rajasthan inbreds namely JB-154-1-2 & JB-203-4, JB-12-1-1, JB-12-1-2-2 & JB-20-19-Br.

Breeder/Institute responsible for maintaining breeder's stock : Professor and Head, Department of Genetics and Plant Breeding (Rajasthan Agriculture University), Campus: S.K.N. College of Agriculture, Jobner-303 329 (Rajasthan)

Description of variety/hybrid :

1. The variety has wide adaptability as it performed well at all the 24 locations spread over the states like Maharashtra, Gujarat, Tamil Nadu, Haryana, Punjab, Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, Karnataka and Himachal Pradesh over five years and high yield potential (Reference AICMIP Annual Reports 1980-81—1985-86).
2. It has shown specific adaptability to saline conditions where it has given more than 30% increase over the best released variety.
3. The leaf to stem ratio is high, stem is soft and leaves are of large size and smooth. These attributes make its fodder more palatable to cattle.
4. When the fodder is harvested at the initiation of the ear a good second cutting of the fodder can be taken profitably.
5. The variety has good grain yield potential therefore, there is no problem in its seed production. The values over five years and 24 locations of different characters as under :

(1) Plant height (cutting stage) : 190.47 cm

(2) Tiller per metre row : 28.76

(3) No. of leaves per main tiller : 10.1

(4) Leaf length (longest) : 79.75 cm

(5) Leaf width (longest) : 4.50 cm

(6) Leaf to stem ratio : 0.57

(7) Duration of the crop : 60 days

(8) Green fodder yield : 295 q/ha.

(9) Dry fodder yield : 64.49 q/ha.

6. *Nutritional Quality character*	*Jobner*	*Ludhiana*
Crude protein (%)	12.32	—
Crude protein yield q/ha.	8.94	7.45 q/ha.
Total mineral (%)	1.04	—
Phosphorus (%)	0.29	—
Calcium (%)	0.37	1.75
Oxalic acid (%)	1.76	—
Ether extract (%)	1.29	—
Crude fibre (%)	26.07	—

Identifiable and distinguishable morphological characteristics of the variety	:	(1) At ear emergence state internodes are completely covered (enclosed) in the leaf sheath, leaves are broad shining. (2) Thick succulent stem. (3) Ear base enclosed in the sheath of flag leaf. (4) Large spindle shaped ears wih bold grain.
Maturity group	:	Medium
Disease and pest resistance	:	It has shown resistance to downy mildew as well as leaf spot. Ergot infection is less than the local check with seed crop.
Recommended ecology	:	Ranking high in green fodder at all the 24 different locations of the country over 4-5 years (1980-81 to 1984-85) in All India Coordinated Foddder Bajra Trials indicating wide adaptability. However, it adapts better than others under high salinity condition. In Rajasthan it has given good performance at different locations spread over Jaipur, Jodhpur and Sikar districts covering widely different rainfall and Soil types.
Yield (in kg/hect.) :		
(a) Commercial product	:	Mean green fodder yield ranged from 15000 kg/ha. to 32600 kg/ha. However, yield as high as 55000 kg/ha. can be easily obtained when appropriate quantity of fertilisers is applied and irrigation are given timely.
(b) Seed	:	Grain yield 1500 kg to 2000 kg/ha. received at Asalpur Farm of Rajasthan Agriculture University.

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3. Crop	:	Golden timothy (*Setaria anceps*)
Name of the variety	:	PSS-1
Parentage with detail of e pedigree	:	Narok 8 parents with high GCH and with frost resistance were selected from the Narok to develop the synthetic.
Breeder/Institute responsible for maintaining breeder's stock	:	Himachal Pradesh Krishi Vishvavidyalaya, Palampur.
Description of variety/hybrid	:	Fast growing variety with dark green leaves brown rusty head, medium thick stems remains green for 9-10 months, very drought and frost resistant.
Identifiable and distinguishable character of the variety	:	(i) Rust brown heads. (ii) Stems at the base are pink in colour. (iii) Remain green under frosty condition.

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4. Crop	:	Sorghum
Name of the variety	:	AKSH-14-150 (SPH-468)
Parents with details of pedigree	:	(AKMS-14A × AKR-150)
Breeder/Institute responsible for maintaining breeder's stock	:	Sorghum Breeder, Punjabrao Krishi Vidyapeeth, Akola-444 104 (M.S.)
Description of variety/Hybrid	:	

Morphological characteristics of Hybrid AKSH-14-150 (SPH-498) and its parents

Description	Hybrid AKSH-14-150 (SPH-468)	Female AKMS-14A	Male AKR-150
1. Pedigree	(AKMS-14A × AKR-150)	(MR-707 × BTX-623) × AKMS 2B	(CS-3541 × 900)
2. Plant ht. Kharif :	190 to 200 cms.	145 cms.	150 cms.
Rabi :	170 to 180 cms.	130 cms.	140 cms.
3. Plant pigments	Tan	Tan	Tan
4. Leaf	Green, Broad, drooping midrib dull green, leaf margin violet before reproductive stage, leaf sheath enclosed stem.	Pale green, narrow drooping midrib pale green, leaf sheath enclosed stem.	Dark green like grassy, very narrow at initial stages and later on broad leaf margin violet: leaf sheath enclosing stem is also violet.
5. Stem	Thick Juicy, purple at base	Thick, Juicy	Thick Juicy purple at base.
6. Earhead	Long, semi compact	Semi compact, long cylindrical, Tapering at end.	Semi compact, long bulging at middle portion and tapering towards both the ends. Flag leaf touching the base of head

Description	Hybrid AKSH-14-150 (SPH-468)	Female AKMS-14A	Male AKR-150
7. Glume	Straw 1/3 covered	Straw 1/3 covered	Faint red 1/3 covered
8. Awn	Awnless	Awnless	Awnless
9. Grain	Medium, Round pearly shining	Medium, Round pearly	Medium, Round pearly, shining.
0. Days to 50% bloom			
Kharif :	62 to 64 days	62 to 64 days	66 to 68 days
Rabi :	67 days to 70 days	66 days to 85 days	66 days to 93 days

Two identifiable and distinguishable characteristics of the variety : It is early in maturity 105 days (flowers in 60 days) violet leaf sheath and leaf margin in hybrid and also in male parent.

Maturity Group : Early

Disease and pest resistance : Satisfactory

Recommended Ecology : Sorghum growing tracts of Maharashtra State.

Yield (in Qtls) :

(a) Commercial Grain : 42 to 45 q/ha.
(b) Fodder : 100 to 105 q/ha.
(c) Seed : 10 to 12 q/ha.

. Crop : Sorghum

Name of the variety : (AKSH-73) *SPH-388*

Parentage with details of its pedigree : (MS-296A × AKR-73)

Breeder/Instt. responsible for maintaining breeder's stock : Sorghum Breeder, Sorghum Research Unit, Punjabrao Krishi Vidyapeeth, Akola (Maharashtra)-444 001.

Description of variety/hybrid :

Morphological characteristics of Hybrid AKSA-73 (ASPH-388) and its parents

Description	Hybrid AKSH-73 (SPH-388)	Female parent MS-296A	Male parent AKR-73
Pedigree	(MS-296A × AKR-73)	(IS-3922 × Karad local)	(SPV-102 × SPV-135)
Plant height	200 cms.	150 cms.	165 cms.
Plant Pigments	Tan	Tan	Tan
Leaf	Dark green, broad, drooping, midrib dull green, leaf sheath enclosed stem.	Dark green, broad, drooping, midrib white, leaf sheath enclosed stem.	Dark green, broad, midrib dull green, leaf sheath enclosed stem.
Stem	Thick, Juicy	Thick, Juicy	Thick, Juicy
Earhead	Long, semi compact cylindircal shaped, short peduncle.	Semi compact more thick at centre and tapering towards end. Top flat with notch boo leaf touching earhead.	Semi compact, oblong, flat top-flag leaf touching base of earhead.
Glume	Straw 1/3 covered	Straw 1/3 covered	Straw, reddish tinge at base
Awn	Awnless	Awned	Awnless
Grain	Medium round pearly	Bold, round, pearly yellow	Medium
Days to 50% bloom	Kharif—70 days	Kharif 72 days Dec. Planting 85-86 days.	Kharif 72 days 75 to 76 days

Identifiable and distinguishable morphological characteristics of the Hybrid : Leaves are dark green, Earheads are long, Semi compact, spindle shaped, short peduncle.

Maturity group : Medium

Disease & pest resistance : Satisfactory

Recommended ecology : Sorghum growing tract of Maharashtra in Kharif season.

Yield :

(a) Commercial Product : 43 to 45 q/ha. grain
125 to 130 q/ha. fodder

(b) Seed : 18 to 20 q/ha. seed

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6. Crop : Sorghum

Name of the variety : (AKSV-37) SPV-669

Parentage with details of its pedigree : (SPV-97 × SPV-29)

Breeder/Instt. responsible for maintaining breeder's stock : Sorghum Breeder, Sorghum Research Unit, Punjabrao Krishi Vidyapeeth, Akola (Maharashtra)-444 001.

Description of variety/ Hybrid :

Morphological characteristics of AKSV-37 (SPV-669)

Description :

(1) Pedigree : (SPV-97 × SPV-29)
(2) Plant Height : 200 to 210 cms.
(3) Plant Pigments : Tan
(4) Leaf : Broad, Horizontal, Darkgreen
(5) Stem : Thick and Juicy
(6) Earhead : Oblong, compact with flat top
(7) Glume : Straw, small
(8) Grain : Pearly, white, medium
(9) Days to 50% bloom : 72 days

Identifiable and distinguishable morphological characteristics of the variety : Variety AKSV-37 (SPV-669) has a compact, oblong head. Grains are pearly White.

Maturity group : Medium

Disease & pest resistance : Satisfactory

Ecology : Sorghum growing tract of Maharashtra in Kharif season.

Yield :

(a) Commercial product : 36 q/ha. grain

(b) Seed : 120 q/ha. fodder

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7. Crop : Maize

Name of the variety : Parvati (composite)

Parentage with details of the pedigree : The following materials have gone into the synthesis of this variety Syn PZOO × Kissan, YUZP-SC7IC, J 603, BIV, BV, Philipine-MR-1, Bokyo Comp. 2 Thai Composite, A52-53, C-2 composite. Equal Quantity seed of above materials were bulked in Kharif 1977 & were advanced at Hyderabad during Rabi 1977-78. In later years it was maintained by growing in isolation and selection of plants with stiff stalks.

Breeder/Instt. responsible for maintaining breeder's stock : H.P.K.V.V. Regional Research Station, Bajaura, Kullu.

Description of variety/hybrid : The plants are medium tall with medium to slightly higher cob placement. The plant height is 250 cm as compared to 260 cm of Vijay and HIM-123 and matures in 110-115 days as compared to 120-125 days of Vijay Composite. It has orange to yellow, flint to semi flint grains. It is more resistant to Bacterial stalk rot than all other varieties under natural field conditions.

Two identifiable and distinguishable characters of the variety : (1) The plants are medium. tall and attain a height of 240-260 cm.

(2) The cob placement is slightly higher than in the middle as in the case of Early Composite but lower cob height than Vijay.

Maturity group : Medium maturity

Disease and pest resistance : More resistant than Vijay and local varieties as well as early composite to Bacterial stalk rot and stem borer.

Recommended ecology	Suitable for cultivation in lower and mid hills particularly where bacteria stalk rot is problem.
Yield (in kgs.).	
(a) Commercial product	4000-5000 kgs. per hect.
(b) Seed	Do.

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8. Crop	Gram
Name of the variety	Haryana Chana No. 1 (H82-2)
Parentage with details of its pedigree	F61 × L 550
Breeder/Instt. responsible for maintaining Breeder's stock	Senior Scientist (Pulses), Deptt. of Plant Breeding, HAU, Hisar.
Description of variety	It is widely adapted under rainfed irrigated and late sown (after cotton and paddy, Ist week of December) conditions. Its dwarf with long fruiting branches efficient in making use of the gaps at farmer's field. Flowering duration long favourable for wider adaptability. Resistant to *Fusarium* wilt and root rot. Early maturing by 2-3 weeks thus escapes serious damage due to *Heliothis*. Yellow attractive seeds (13 g/100 seeds).
Two identifiable and distinguishable morphological characteristics	Foliage colours light green, no pigmentation on stem or leaf axil. In chlorosis (yellowing of growing after irrigation) absent. Its dwarf long primary branches growing side ways and short secondary branches. Seeds yellow with chalazal beak longer than others. F61-desi, erect, heavy lateral order branches, green stem, yellow seed, wilt tolerant. L550=Kabuli, long primary branches widely adapted. Seeds salmon, medium size.
Maturity group	Early 2-3 weeks than existing varieties.
Diseases & pest resistance	Escape mechanism of resistance to Heliothis (due to earliness) 30-40% less damage than checks. Resistant to *Fusanium* wilt races and also resistant to root rot.
Recommended ecology	Whole of state under different soils.
Yield (in kgs/hec.) :	
(a) Commercial Product	(Seed + Bhusa) 3500—4000 kgs/ha
(b) Seed	Under National Pulses. Project when tested on one acre plot at farmer's fields (rainfed irrigated and late sown) its average yield was 1747 kg/ha. against 1165 kg/ha of check and State average was 934 kg/ha. This variety has given same yield at research farm as well as farmer's fields. Yield potential is 30 q/ha.

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9. Crop	Wheat (*Triticum aestivum*)
Name of the variety	HP 1493
Parentage with detail of its pedigree	E 8841 × NP 830
Breeder/Instt. responsible for maintaining breeder's stock	Dr. M.P. Jha, Senior Wheat Breeder, IARI Regional Station, Puna, Bihar.
Description of variety/hybrid :	
(a) Plant height	35 cm (Tall)
(b) Morphological characters	Glabrous white glume, compact ear very bold lustrous slightly elongated grains.
Maturity	135-140 days
Agronomic features	Lodging : Moderately resistance to lodging, score 4 similar to C 306. Shattering : No problem
	Fertiliser responsiveness: Similar to C 306. Better adapted for October sowings as judged from Agronomic trials. Seed Rate : 100 kg/ha
Quality of produce of grains, forage/fibre	Grains are amber hard, 1000 grain wt. around 50 gms.
Reactions to stresses	Suited to drought stress condition

		Female NP 830	*Male E* 8841
Plant height	:	Tall (Approx. 135 cm)	Tall (Approx. 130 cm)
Distinguishing morphological characters	:	Conventional tall type suited to rainfed.	Tall, exotic source of resistance to leaf rest.
Days to 50% flowering	:	90 days	about 105 days
Maturity	:	135-140 days	Approx. 150 days
Reaction to Major diseases	:	Susceptible to brown rust	Resistant
Major pests	:	No specific problem	No specific problem
Agronomic features	:	Both are susceptible to lodging other problems are not much like shattering.	
Reaction to stresses	:	Drought resistant	Not known
Two identifiable & distinguishable morphological characteristics	:	(a) Glabrous, white glume (b) Very bold, lustrous slightly elongated grain.	
Maturity group	:	Medium, a week earlier than C 306	
Recommended ecology	:	Rainfed low fertility condition throughout Bihar.	
Yield (in kgs) :			
(a) Commercial product	:		
(b) Seed	:	(i) 23q/ha under rainfed condition from Gandak Area Development Agency. (ii) In the farmers fields from Munger district yield reported was around 24 Qtls/ha, during last 3 years. (iii) (iv) Average yield under normal conditions was 20 Qtls/ha.	

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10. Crop	:	Sesamum
Name of the variety	:	Krishna
Parentage with details of its pedigree	:	M_{3-2} × Venezulam 17/4 M_{3-2} variety of State and Venezulam 17/4 non-shattering disease & pest resistance line from Venezula.
Breeder/Instt. responsible for maintaining breeder's stock	:	Dr. U.K. Rai, RAU, Pusa Mr. S. Wasif Ali B.A.C., Sabour.
Description of variety	:	Plant height about 2.5 m. with branching standing at 25 to 30 cm. height capsule size 2.6 cm seed black and 1000 seeds weight 2.62 gms. Stem hairy with secondary end few tertiary branches.
Identifiable & distinguishable morphological characteristics of the variety	:	Leaves light green and woolly. Flowers solitary and light purple in colour. Capsules four loculed and does shattering.
Disease and pest resistance	:	Field resistance to leaf blight stem rot and phyllody. Resistant to Bihar Hairy caterpillar slightly susceptible to Til hawk moth.
Recommended ecology	:	Entire state for kharif and summer and for Summer only in other States.
Yield (in kg/hect.) :		
(a) Commercial products	:	Kharif : 600 to 800 Summer : 700 to 1200
(b) Seed	:	400

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11. Crop	:	Toria (*Brassica compestris*)
Name of the variety	:	RAU TS-17
Parentage with detail of its pedigree	:	UP-70-Sc-17
Breeder/Instt. responsible for maintaining breeder's stock	:	Dr. U.K. Rai, RAU, Pusa Mr. S. Wasif Ali, Agril. College, Sabour.
Description of variety	:	60 cm to 100 cm tall plant, lax inhabit profuse branching, with 40 to 60 siliqua on main branch. Seed colour brown with 15-20 seeds per siliqua.
Identifiable morphological characteristics of the variety	:	Plant maintains good growth rate, lax in appearance, may attain a height of 100 cm with 20 numbers of secondary branches under irrigated condition.
Maturity	:	85 to 100 days.

Disease and pest resistance : Same as in T-9 and BR-23

Recommended ecology : Suitable for all the zones of Bihar in Rabi season more so far Diara lands.

Yield (Kgs/hec.) :

(a) Commercial product : Normal lands-800 to 1000, Diara lands 900 to 1400.

(b) Seed : 600

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12. Crop : Groundnut

Name of the variety : Birsa Groundnut-3

Parentage with detail of its pedigree. : Developed through hybridization between varieties Early Runner × Asiriya Muitunde: the female parent being a mid-early Virginia spreading type and the pollen parent a Virginia bunch type having late maturity.

Breeder/Instt. responsible for maintaining Breeder's stock : Dr. P.K. Sinha & Sri M.H. Rahman } **Breeders**

Deptt. of Plant Breeding & Genetics, Birsa Agrl. Univ., Kanke, Ranchi-834006.

Description of variety/hybrid :

(a) Plant height : 65-70 cm.

(b) Distinguishing morphological characters : Virginia bunch

Flower colour	Orange yellow,
Peg colour	Purplish green,
pod colour	Straw; longitudinal reticulation on pod surface more prominent than transverse
Constriction between seed chambers	slight
pod size	medium (30 mm × 12 mm); pods usually 2-seeded, occasionally-3-seeded
Testa colour	rose
100-kernel wt.	50-60 gms.
Shelling	73-75%
SMK	Above 95%
Oil content	51%

Description of parents of the hybrid : Non-Synchronization not a problem

Characteristics	*Early Runner*	*Parental varieties* *Asiriya Muitunde*
(a) Plant height	20-25 cm.	50-55 cm.
(b) Morphological characters	Virginia spreading, mid-early maturity & rose kernel.	Virginia bunch, late maturity & red kernel.
(c) Days to 50% flowering	26-28 days	28-30 days
(d) Days to maturity	115-120 days	140-150 days
(e) Problem of synchronization	Nil (N.A.)	Nil (N.A.)
(f) Reaction to major diseases under rainfed	Moderately suspceptible to Tikka leaf spots & *Rhizoctonia.*	Fairly resistant to Tikka leaf spots and *Rhizoctonia.*
(g) Reaction to major pests under field & controlled condition store-pests.	No significant pest problem in the area tested.	
(h) Agronomic features	Mid-early maturity & fairly good yield.	Attractive red & plump seeds.
(i) Reaction to stress	Moderately resistant to drought.	Yield is reduced due to moisture during filling.

Identifiable and distinguishable morphological characteristics of the variety/hybrid : Plant height—65-70 cm.
Kernel colour—rose, Shape—Slightly oval, Habit—bunch, Maturity—medium Parent—*Early Runner :*
Virginia Spreading, rose kernel Parent—*Asiriya Muitunde:*
Virginia Bunch, late with red kernels.

Maturity group : Mid-early (115-118 days)

Disease & pest resistance : No significant pest problem in the areas tested; fairly resistant to Tikka leaf spots.

Recommended ecology : Sandy loam soils with rainfall of 700 to 1300 mm. during the crop season. To be grown as rainfed Kharif crop.

Yield (in kg/hec) :

(a) Commercial product : 2200 to 2500 kg pods/ha.

(b) Seed : 1500 to 1700 kg kernels/ha.

13. Crop : Groundnut

Name of the variety : MH 4

Parentage with detail of its pedigree : Improvement of MH2 for Plant height by selection.

Breeder/Instt. responsible for maintainin breeder's stock : Oilseeds Section, Deptt. of Plant Breeding, HAU, Hisar.

Description of variety :

Characteristic features of newly developed variety MH 4 against MH 2, MH 1 & JL 24

Sr. No.	*Character*	*MH* 4	*MH* 2	*MH* 1	*JL* 24
(1)	Days to maturity	115	113	126	128
(2)	Plant height (cm)	18	11	60	68
(3)	No. of branches	7	5	15	16
(4)	No. of pods per plant	37	22	25	27
(5)	Kernels per pod	2.3	2.1	2.8	2.9
(6)	100-kernel weight (g)	32.2	29.8	40.7	20.9
(7)	Shelling percentage	69.7	71.3	70.9	71.2
(8)	Oil content (%)	47.0	46.0	50.3	49.8

Identifiable & distinguishable morphological characteristics of the variety : Bunch type, Semi-dwarf darkgreen foliage.

Maturity group : Early (115 days)

Disease & pest resistance : Tolerant to tikka disease

Recommended ecology : Area in Haryana State having assured irrigation facilities.

Yield (in kg/hec) :

(a) Commercial product : Average pod yield of 3000 kg/ha.

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14. Crop : Soybean

Name of the variety : Shiwalik (Himso-333)

Parentage with detail of the pedigree : It is a selection from segregating line PK 73-55.

Breeder/Instt. responsible for maintaining breeder's stock : Himachal Pradesh, Krishivishva Vidyalaya, Palampur.

Description of variety/hybrid : Plant height : 90-100 cm. Erect growth habit, light Creamy, pubescence on stem, leaves and pods. Flower colour: white. Yellow seed with dark brown hilum. Resistant to yellow mosaic virus.

Two identifiable & distinguishable characters of the variety :
(1) Light creamy pubescence on stem, leaves and pods.
(2) Flower colour white
(3) Yellow seed with dark brown hilum

Maturity group : Medium maturity group

Disease and pest resistance : Resistant to yellow mosaic virus

Recommended ecology : Suitable for general cultivation upto 900 m above m.s.l. in Himachal Pradesh.

Yield (in kgs/hec) :

(a) Commercial Product : Nil

(b) Seed : 1500 kg—2000 kgs/ha.

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15. Crop : Soybean (*Glycine max.* (L))

Name of the variety : JS 76-205 (Jawahar Soybean)

Parentage with details of its pedigree : Developed from a cross between Kalitur × Bragg. Single plants from F2 onward generations were selected to grow their progeny. Homogenious progeny No. 205 was bulked during 1976 in F5 generations.

Variety Kalitur is a land variety of M.P. State, while variety Bragg was introduced from the USA is under cultivation since 1965.

Breeder/Instt. responsible for maintaining breeders stock : Nucleous Seed Prodution Unit, Deptt. of Plant Breeding & Genetics, J.N.K.V.V., Jabalpur and Zonal Research Station, Powarkheda & Sagar.

	Description of the variety	Plants are medium tall 50-60 cm with slightly Zig-zag stem semi-indeterminae growth habit and branched. Leaves are green smaller in size. Flowers are purple and takes about 46 days for 50% flowering. Plants at maturity (104 days) are covered with brown pubescence. Seeds are black medium small (11-12 gm/100 seeds).
	Identifiable and distinguishable morphological characteristics of the variety.	(i) Black seed coat (ii) cotyledonary leaves and foliages are smaller in size than the other recommended or cultivated varieties (iii) The stem growth is slightly zig-zag.
	Maturity group	JS 76-205 is medium maturity variety of about 104 days duration.
	Disease and pest resistance	JS 76-205 is resistant to Bacterial pustule, seed and seedling rot, charcoal rot, Rhizactonia and pod blight diseases. The common insect pest viz., leaf defoliator, girdle beetle and stemfly is similar to other recommended varieties.
	Recommended ecology	JS 76-205 grows well in different agroclimatic conditions of varying soil depth (Shallow to deep black) and rainfall areas (25"-60") of the state. It performed relatively well under low management and environmental stress conditions in the state. This is highly suitable variety in the distt. of Hoshangabad, Narsinghpur, Chhindwara, Jabalpur, Vidisha, Sagar where above mentioned stress conditions are generally existing.
	Yields	An average yield of 16 to 22 qtls/ha. is obtained with minimum GXE.

16.	Crop	Paddy
	Name of the variety	Sakoli-7
	Parentage with detail of its pedigree	TN-1 × Basmati-370
	Breeder/Instt. responsible for maintaining breeder's stock.	Plant Breeder, National Agricultural Research Project, Sakoli, Distt. Bhandara
	Description of the variety	(i) Height - 175 cm. Earhead awnless, Apiculus-Green, Graintype-L.S Milling — 75%, Scent—Deep scented (S.S.)
	Identifiable and distinguishable morphological characteristics	(1) Apiculous : Colourless (2) Earhead : Slightly compact (3) Height : Dwarf (4) Grain : Short slender
	Maturity group	Early
	Disease & pest resistance	(1) Resistant to blast and moderately susceptible to bacterial leaf blight. (2) International screening test of the variety was found resistant to leaf folder and whorl maggot. It was also found tolerant to brown spot.
	Recommended ecology	Recommended for paddy growing areas of Vidarbha in Maharashtra to replace early Luchai and Luchai type early strains like Hiramoti in Chandrapur, Nagpur Gadohiroli and Bhandara Districts under transplanting and direct sowing in bunded fields.
	Yield :	
	(a) Commercial product	50 to 55 quintals.
	(b) Seed	40-45 quintals.

17.	Crop	Paddy
	Name of the variety	SYE-ER-1 (IET-9296)
	Parentage with details of its pedigree	Sona × Sye 44-3 (1) *Sona* (IET-1991)—This is a variety released by Central Release Committee. It has got long slender thin grain & matures in 135 days. This variety is hard to thresh. Moderately susceptible to Blast. But good cooking quality. Equal in yield potential (35 qtl./ha.) as predominant tall variety W.L. 112 of this Region. (2) *Sye*-44-3.—This culture is a derivative of TN-1 × W.L. 112, matures in 116 days with medium slender grain, moderately susceptible to blast. No synchronization in tillering even though it has a good yield potentiality in early duration. (3) The culture No. of Sye-ER-1 is Sye-148-95.

Description of the variety .

(1) Plant height	95 to 98 cm.
(2) Days to 50% flowering	85 to 90 days
(3) Duration of the crop	115 to 120 days
(4) Lodging	Non-lodging
(5) Threshability	Easy
(6) Shattering	Non-shattering
(7) Length of grain kernel	5.79 m.m.
(8) Breadth of grain kernel	1.90 m.m.
(9) L/B ratio	3.04
(10) Grain type	Shot slender
(11) Abdominal white	Absent
(12) Dormancy	20 days
(13) 1000 grain wt.	16.6 gm
(14) Cooking quality	Acceptable
(15) Milling percentage	68.6%
Identifiable & distinguishable morphological characteristics of the variety	(1) Earheadless (2) Height in cm. —115 cm. (3) Long slender Length : 6.65 mm. Breadth : 1.88 mm. L/B ratio : 3.53
Maturity group	Medium (130 to 135 days)
Disease & pest resistance	Moderately resistant to blast and bacterial leaf blight.
Recommended ecology	Recommended for paddy growing area of Vidarbha in Maharashtra to replace Basmati-370 and Chinoor.
Yield :	
(a) Commercial product	50 to 55 quintals.
(b) Seed	40 to 45 qts.

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18. Crop	Finger millet (*Eleusine Coracana*)
Name of the variety	VL Mandua 124
Parentage with details of its pedigree	Local collection from Kumaon, U.P.
Description of the variety:	
(a) Plant height	115—125 mm
(b) Maturity period	105 days in U.P. hills
(c) Flowering period	65-70 days
(d) Type of ear	Highly compact
(e) No. of tillers	5-6
(f) No. of fingers per ear	8-10
(g) Finger length	8 cm
(h) Protein content	7.86%
Maturity group	Early
Disease & pest reactions	Insects pose no problem to this variety as observed in coordinated trials during 1986-88. At all India level, moderate to resistant blast reactions have been recorded.
Recommended ecology	Himalayan region
Grain yield	Average grain yield: 2500-3000 kg/ha VL 124 has been released for U.P. hills where it had been evaluated in multilocational Standard Varietal Trials for six years (1983-88).
Distinguishable morphological characteristics of the variety.	(a) Pigmentation of nodes (b) Highly compact ear-head

19. Crop	:	Barnyard millet (*Echinochloa Frumentacea*)
Name of the variety	:	VL Madira 21
Parentage with details of its pedigree	:	Local collection from Garhwal region of U.P.
Breeder/Instt. responsible for maintaining breeder's stock	:	Vivekananda Parbatiya Krishi Anusandhan Shala (ICAR), Almora, U.P.
Description of the variety :		
(a) Plant height	:	120-130 cm
(b) Type of ear	:	Erect
(c) Nature of ear	:	Semi open (Intermediate)
(d) Number of tillers	:	3-5
(e) Number of fingers/ear	:	35-40
(f) Finger length	:	20 cm
(g) Finger width	:	3 cm
(h) Ear weight	:	16-18 gm
(i) 1000 grain wt.	:	3.64 g.
(j) Maturity	:	80-90 days in plains & 90-100 days in hills
(k) Protein content	:	9.40%
(l) Fat content	:	6.75%
Distinguishable morphological characteristics of the variety	:	Semi open, erect earhead Light purple colour of the earhead
Maturity group	:	Early
Disease & Pest reactions	:	Very low incidence of smut and leaf spot diseases had been recorded in the coordinated trials at all India level. Similar observations have been recorded from Almora and Bhowali locations of UP. Insect damage in VL 21 is also of low order hence poses no threat to this variety.
Recommended ecology	:	Plains as well as hills
Grain yield	:	Average grain yield 2500 kg/ha.

20. Crop	:	Bengal gram (*Cicer areitinum* L.)
Name of the variety	:	Phule G-12
Parentage with details of its pedigree	:	GW-5/7×Ceylon-2 (GWC)
Breeder/Instt. responsible for maintaining breeder's stock	:	Plant Breeder (Pulses), Mahatma Phule Agri. Univ., Rahuri-413 722.
Description of the variety/HY :		
(i) Growth habit	:	Dwarf, semi-erect
(ii) Period of flowering	:	47 to 50 days
(iii) Maturity period	:	96 to 100 days.
(iv) Stem colour	:	Green with purple pigmentation.
(v) Leaf	:	Dark green, medium leaflet
(vi) Flowers	:	Pink
(vii) Pods	:	Medium bold, single per axil.
(viii) Seed	:	Wrinkled, yellow
(ix) 1000 seed wt.	:	160-165 g.
(x) Grain yield	:	1000 kg/ha.
(xi) Suitability	:	For rainfed cultivation.
Identifiable and distinguishable morphological characteristics.	:	Semi-erect plant type with small leaflets, foliage turning bronze towards maturity.
Maturity group	:	Early.
Disease & pest resistance	:	Resistant to *Fusarium* wilt.
Recommended ecology	:	Western Maharastra
Yield (in kg/ha.) :		
(a) Commercial product	:	1000 kg/ha.
(b) Seed	:	

21. Crop	:	Rice (*Oryza sativa* L.)
Name of the variety	:	Ratnagiri-1
Parentage with details of its pedigree	:	IR-8/Ratnagiri-24
Breeder/Instt. responsible for maintaining breeder's stock	:	Agricultural Research Station, Shirgaon, Tal. & Distt. Ratnagiri, Maharashtra State, India, Pin - 415629.
Description of variety :		
(a) Plant height	:	100 to 105 cm
(b) Distinguishing morpholigical characters	:	Dark green foliage, mid-tall, good tillering ability & long bold grain.
Maturity (range)	:	115 days.
Identifiable & distinguishable morphological characteristics of the variety	:	Dark green foliage, mid-tall with long bold grain.
Maturity group	:	Early group
Disease & pest resistance	:	Moderately resistant to blast. Neck blast absent.
Recommended ecology	:	Suitable environmental conditions required for growing early paddy variety.
Yield (in kg/ha.)	:	4700 to 5000 kg/ha.
(a) Commercial product	:	Could be used for POHA and puffed rice.
(b) Seed	:	Sufficient quantity is available
Data on Ancillary Characters & Disease reaction		
(1) Days to 50% flowering	:	83 days
(2) Days to maturity	:	115 days
(3) Panicle length	:	22.1 cm.
(4) Spikelets/panicle	:	144
(5) Plant height	:	100 to 105 cm
(6) Grain character:		
(i) Length	:	7.5 mm
(ii) Breadth	:	2.6 mm
(iii) L/B ratio	:	2.9
(iv) Grain type	:	Long bold
(v) 1000 grain weight	:	30 g.
(7) Dormancy period	:	20 days
(8) Disease reaction :		
(i) Blast	:	Moderately resistant
(ii) Neck Blast	:	Absent
(iii) B.L.B.	:	Moderately susceptible

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22. Crop	:	Rice (*Oryza sativa* L.)
Name of the variety	:	Ratnagiri-2
Parentage with detail of its pedigree	:	Ratnagiri 68/Varangal 487 Ratnagiri 68 : It is a mid-tall, long bold, late duration, resistant to blast and moderately resistant to bacterial leaf blight and possesses wider adaptability. Ratnagiri-68 is developed by the Konkan Krishi Vidyapeeth, Dapoli from cross between IR-8 and Si-gadis. Varangal 487 : It is a selection from local tall type Varangal. It is tall, very late in kharif and early in rabi-hot season, short slender with translucent kernel.
Breeder/Instt. responsible for maintaining breeder's stock.	:	Agricultural Research Station, Shirgaon, Tal. and Distt. Ratnagiri, Maharashtra State, India. Pin. 415 629.
Description of variety :		
(a) Plant height	:	105 to 110 cm.
(b) Distinguishing morphological characters	:	Dark green foliage, mid-tall, good tillering ability and short bold grain
Maturity	:	155 days.

	Identifiable and distinguishable morphological characterisitcs.	Dark green foliage, mid-tall with short bold grain.
	Maturity group	Very late group
	Disease and pest resistance	Moderately resistant to blast, Neck blast absent.
	Recommended ecology	Suitable environmental condition of high rain-fall and medium to heavy low land soils.
	Yield (in kg/hec.)	5000 kgs/ha.
	(a) Commercial product	Could be used for POHA and puffed rice.
	(b) Seed	Sufficient quantity is available.

23.	Crop	Rice (*Oryza sativa* L.)
	Name of the variety	Karjat-1
	Parentage with detail of its pedigree	Holamaldiga/Z×IR-36 Holamaldiga-A semi-tall, slender grain variety, maturing in 120 to 125 days Z×IR-36-A semi-dwarf, multiresistant, fine grained variety, maturing in 110 to 115 days.
	Breeder/Instt. responsible for maintaining breeder's stock	Regional Agricultural Research Station, Karjat, Distt. Raigad, Maharashtra State, India.
	Description of variety	(a) Plant height 65 to 70 cm. (b) Morphological character : Dwarf, dark green foliage, short bold kernel and early duration.
	Identifiable and distinguishable morphological characteristic of the variety	(1) Dwarf with 65 to 70 cm height (2) Dark green foliage with short bold grain.
	Maturity group	50% flowering : 80 to 85 days Maturity : 105 to 110 days (early group)
	Disease & pest resistance	(1) Reaction to BB : (a) Resistant to bacterial blight at vegetative and at flowering stage. (2) Reaction to Blast : Moderately resistant. (3) Reaction to leaf Scal : Moderately resistant.
	Recommended ecology	Specific environmental condition of endemic pockets of bacterial blight.
	Yield (in kg/hec.)	3500 to 4500 kgs/ha.

24.	Crop	Rice (*Oryza Sativa.* L.)
	Name of the variety	Palghar-1
	Parentage with detail of its pedigree	IR-22/Palghar-141-1
	Breeder/Instt. responsible for maintaining breeder's stock	Agricutural Research Station, Palghar, Distt. Thane, Maharashtra State
	Description of variety	Plant height : 85 to 90 cms.
	Morphological characters	Erect, short narrow dark green leaves, grain tip slightly curved, spikelet arrangement is more dense at the base than at the tip of ear head.
	Identifiable and distinguishable morphological characteristics.	(1) Plant erect short with narrow dark green leaves. (2) Grain tip slightly curved and spikelet arrangement is more dense at the base than at the tip of ear head.
	Maturity group	Medium group
	Disease and pest resistance	Moderately resistant to blast and moderately resistant to stem borer.
	Recommended ecology	Suitable environmental conditions required for growing the midlate variety.
	Yield (in kg/hec.)	4000 to 4500 kg/ha.
	(a) Commercial product	—
	(b) Seed	Sufficient quantity of seed available.

25.	Crop	Rice (*Oryza sativa.* L.)
	Name of the variety	Panvel-2
	Parentage with details of pedigree	Bhura rata 4-10/IR-8
	Breeder/Instt. responsible for maintaining breeder's stock	Agricultural Research Station, Panvel, Distt. Raigad, Maharashtra State.
	Description of variety	It is semi tall variety with 90 to 105 cm height, non-lodging responsive to N fertilizers, early in duration non-shattering, fine & translucent kernel.
	Identifiable & distinguishable morphological characteristics	Semi-tall with 90 to 105 cm height, fine and translucent grain
	Maturity group	Maturity-120 days Early group.
	Disease and pest resistance	Resistant to blast, Neck blast absent, tolerant to salinity.
	Recommended ecology	Suitable for coastal saline soil of Konkan region.
	Yield (in kg/hec.)	3300 to 4100 kg/ha.
	(a) Commercial product	—
	(b) Seed	Sufficient quantity of seed available.

ANNEXURE IV

Minimum limits of Labelling

Sl. No.	Kind	Minimum limit of germination in %	Minimum limit of purity in %	Remarks
1	2	3	4	5
1.	Barley	80	98	
2.	Paddy	75	98	
3.	Wheat	80	98	
4.	Triticale	80	98	
5.	Maize	80	98	
6.	Sorghum	70	98	
7.	Bajra	70	98	
8.	Barnyard Millet	70	97	
9.	Common Millet	70	97	
10.	Finger Millet	70	97	
11.	Italian Millet	70	97	
12.	Kodo Millet	70	97	
13.	Little Millet	70	97	
14.	Black gram	70	98	
15.	Bengal gram	80	98	
16.	Cowpea	70	98	
17.	Green gram	70	98	
18.	Horse gram	75	98	
19.	Indian bean (lab lab)	70	98	
20.	Khesari	70	98	
21.	Lentil	70	98	
22.	Moth bean	70	98	
23.	F. Peas/G. Peas	70	98	
24.	Pigeonpea	70	98	
25.	Rajmash	70	98	
26.	Castor	65	98	
27.	Groundnut	65	96	
28.	Mustard/Rape/Toria	80	97	
29.	Linseed	75	98	
30.	Niger	75	98	
31.	Taramira	80	97	
32.	Safflower	75	98	
33.	Sesame	75	97	
34.	Soybean	65	98	
35.	Sunflower	65	98	
36.	Cotton	60	98	
37.	Jute	75	97	
38.	Berseem	75	98	
39.	Buffel grass/Bird wood grass	25	80	
40.	Dharaf grass	10	80	
41.	Dinanath grass	45	95	
42.	Forage Sorghum/Sudan grass	70	97	
43.	Guar	65	98	
44.	Guinea grass	15	80	
45.	Indian clover	60	98	
46.	Lucerne	75	98	
47.	Marvel grass	35	90	
48.	Oats	80	98	
49.	Rice bean	65	98	
50.	Setaria grass	45	95	
51.	Stylo	35	90	
52.	Teosinte	75	98	
53.	Ash gourd	55	98	
54.	Bitter gourd	55	98	
55.	Bottle gourd	55	98	
56.	Cucumber	55	98	
57.	Tinda	55	98	
58.	Long Melon	55	98	
59.	Musk melon	55	98	
60.	Pumpkin	55	98	
61.	Ridge gourd	55	98	
62.	Snake gourd	55	98	
63.	Snap melon	55	98	
64.	Sponge gourd	55	98	
65.	Summer Squash	55	98	
66.	Water melon	55	98	
67.	Brinjal	65	98	
68.	Capsicum	55	98	
69.	Bhindi	60	99	
70.	Radish	65	98	
71.	Tomato	65	98	
72.	Amaranth	65	95	
73.	Asparagus	65	96	
74.	Celery	65	97	
75.	Methi	65	98	
76.	Lettuce	65	98	
77.	Parsley	60	97	
78.	Spinach	55	96	
79.	Cabbage	65	98	
80.	Cauliflower	60	98	
81.	Chinese Cabbage	65	98	
82.	Knol Khol	65	98	
83.	Onion	65	98	
84.	Carrot	55	95	
85.	Celeriac	65	97	
86.	Beet Root/Sugarbeet	55	96	
87.	Turnip	65	98	
88.	Potato	75	98	
89.	Winter Squash	55	98	
90.	True Potato Seed	80	98	

ANNEXURE V

Proforma for submission of the proposal for denotification of crop variety under Section 5 of the Seeds Act. 1966

1. State

~~2. Crop~~

3. Name

4. Year of notification and S.O. number

5. Name of the Originating Breeder/Institute of the variety

6. Reasons for denotification :

7. Names of the varieties which have replaced/will replace the denotified variety :

8. Recommendation of the All-India Workshop about the denotification of the variety :

Signature of the Chairman/Convenor State Seed Sub-Committee/Sponsoring Authority

Name :

Designation:

Minutes of the Sixteenth Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held on 15th June, 1990 under the Chairmanship of DDG (CS), ICAR

The list of the participants is at Annexure I.

2. The Chairman while welcoming the participants mentioned that the life of the present Committee will be over on 14th July, 1990 and due for reconstitution. He took the opportunity of expressing his appreciation and gratitude to the members of the Committee for helping him to discharge the functions of the Committee in an effective way and for the honour and privilege of serving as Chairman. He especially mentioned that during the last two years, no proposal was delayed for release/notification and in fact, the Committee met more number of times than the prescribed frequency.

3. After this, the regular Agenda Items were taken for discussion. The decision of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each item is indicated as under:—

Item No. 1: Confirmation of the Minutes of the 15th Meeting of the Central Sub-Committee on Crop Standards Notification and of Varieties held on 28th February, 1990.

4. The minutes of the previous meeting were confirmed.

Item No. 2: Review of action taken on the Minutes of the 15th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties.

5. The position indicated in the Agenda Notes was noted by the Committee/participants.

Item No. 3: Release of Varieties.

6. Twenty one proposals of various varieties of different crops were considered for release/ notification. The observations of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties on each proposal is indicated in the table given below:

Table No. 1 : Details of the varieties recommended for Release/Notification

Sl. No.	Crop	Variety	Remarks
*1.	Black pepper	Subhakara (KS-27)	Recommended for release and cultivation for Kerala and Southern Karnataka.
*2.	Cashew	NRC Cashew selection-1	Recommended for release and cultivation in laterite soils of coastal Karnataka.
3.	Cotton	MECH-4	Recommended for release and cultivation in Central Zone consisting of Maharashtra, Gujarat, Southern Rajasthan (Banswada tract)
4.	Groundnut	ICGS-37 (ICGV 87187)	Recommended for release and cultivation in Zone-II (Summer Groundnut Zone consisting of Gujarat, North Maharashtra and Madhya Pradesh).
5.	Cluster bean	Guara-80	Recommended for release and cultivation in North Western Zone
6.	Mustard	Narendra Rai (NDR-8501)	Recommended for release and cultivation in Uttar Pradesh. It is reported that the variety is bold seeded, high in oil content and tolerant to moderate salinity and alkalinity condition.
7.	Sesamum	RT-46	Recommended for release and cultivation in Zone-I comprising of J&K Himachal Pradesh, Punjab, Haryana, Rajasthan and Western Uttar Pradesh.
**8.	Bajra	HHB-67	Recommended for release and cultivation in Zone-A.
9.	Bajra	VBH-4	Recommended for release and cultivation in Zone-B (during the rainy season).
10.	Wheat	HD-2501	Recommended for release and cultivation in Peninsular Zone comprising the States of Maharashtra, Karnataka, Tamilnadu and Andhra Pradesh.

*NOTE: Seeds of Black pepper and Cashew are not covered under the Seeds Act and hence the varieties of these crops mentioned at Serial No. 1 and 2 are not recommended for Notification under Section 5 of the Seeds Act.

**Bajra HHB-67 allready notified vide SO 386(E) dated 15-5-90

The detail of the important features of the above varieties is given in Annexure II.

Table No. 2 : List of the varieties which could not be recommended for release/notification for want of more information

S.No.	Crop	Variety	Remarks
1	2	3	4
1.	Brinjal	Pusa Anupam	The proposal might be resubmitted with the following information : (i) detailed data on yield performance along with agronomic data for Zone-8 ; (ii) data on disease resistance under epiphytotic and natural condition ; (iii) data relating to the performance of variety in Karnataka (iv) data on keeping quality
2.	Turmeric	Sudarshana (PCT-13)	There is ambiguity in the data furnished in Table-IV and V of the proposals. For example, in Table-IV, the percentage of quality parameters indicated do not tally with Table-V. The sponsoring authority should carefully go through the data furnished in various tables and proposals might be resubmitted after making necessary corrections. After receipt of the corrected proposal, Chairman will decide about the release of the varieties.
3.	Turmeric	Suguna (PCT-14)	
4.	Soybean	Pusa-22	The variety was tested from 1979 to 1982 and proposal has been put up in 1990 thus considerable time lag exists. It is recommended that variety might be tested against the latest check and proposal might be resubmitted with the required data generated against the latest check.
5.	Sorghum	CSH-13R hybrid	The proposal might be resubmitted alongwith the following information : (i) more agronomic data especially with regard to date of sowing; (ii) Resistance to pest especially with reference to attack of shoot fly. Damage of shoot fly with reference to various dates of sowing. (iii) Performance of the variety against Maldandi. (iv) Chairman was authorised to decide the Release and Notification of the hybrid after receipt of the above data.
6.	Cowpea	Bundel Lobia-1	The proposals might be resubmitted with the following information : (i) More data on agronomic trials, fodder seed yield and data generated against the checks (ii) Quality data especially IVDMD and crude protein
7.	Dinanath grass	Bundel Dinanath-3	
8.	Dinanath grass	Bundel Dinanath-4	
9.	Bajra	RCB-IC-9	The proposal might be resubmitted with the following :— (i) detail of the data locationwise; (ii) more data on agronomic trials and also relating to fodder production and maturity period Note : sponsoring authorities of the above proposals are requested to resubmit the proposal along with desired information. Kindly note that the proposal will be considered only after receipt of the desired information.

Table No. 3 : Detail of the varieties which could not be recommended for release/notification

S.No.	Crop	Variety	Remarks
1.	Black pepper	Sreekara (KS-14)	The variety Subhakara (KS-27) has been found superior to Sreekara and hence Sreekara was not recommended for release.
2.	Cashew	NRC Cashew Selection-2	The variety NRC Cashew Selection-1 was found superior in comparison to NRC Cashew Selection-2 and hence it was not recommended for release.

Item No. 4: Consideration of proposals for notification.

7. Twenty four proposals were considered for notification. The recommendation of the Committee is indicated in the following tables:

Table No. 4 : Detail of the varieties recommended for notification for entire country under Section 5 of the Seeds Act

S.No.	Crop	Variety
1	2	3
1.	Cotton	Abadhita-1
2.	Cotton	Arunabha (JK-119)

1	2	3
3.	Cotton	G. Cot. DH-9
4.	Cotton	G. Cot. 15
5.	Cotton	NHB-12
6.	Cotton	Priya (NA 920)
7.	Foxtail Millet	Lepakshi (AK-132-1)
8.	Mustard	Gujarat Mustard-1
9.	Maize	Prabha
10.	Paddy	Pawana
11.	Paddy	Kundalika
12.	Paddy	Terna
13.	Paddy	Krishnaveni (MTU 2077)
14.	Yellow Sorghum	N-14
15.	Sorghum	Nandyala Tella Jonna-2
16.	Sorghum	DSV-1
17.	Wheat	Gujarat Wheat 496
18.	Wheat	Gujarat Wheat 503
19.	Sorghum	GFS-4

Note : The details of the morphological characters of the above varieties are given in Annexure III.

Table No. 5 : The detail of the varieties which could not be recommended for notification for want of more information

S.No.	Crop	Variety	Remarks
1.	Cotton	LH-1134	The sponsoring authority might submit the proposal through Punjab State Seed Sub Committee.
2.	Cotton	DDH-2	The sponsoring authority might submit the proposal through Karnataka State Seed Sub Committee.
3.	Bajra	GHB-181	The proposal might be resubmitted alongwith the recommendation of the All-India Workshop.
4.	Sorghum	Nandyala Tella Jonna-1	Do.

Note : Sponsoring authorities are requested to furnish the proposal alongwith desired information. Kindly note that the proposal would be considered only after receipt of the information indicated above.

Table No. 6 : Detail of the varieties which could not be recommended for notification

S.No.	Crop	Variety	Remarks
1.	Wheat	Kailash (PBN-142)	The variety has been reported highly susceptible to black and brown rusts and thus was rejected for notification.

Item No. 5: Testing of varieties bred/developed/ imported by MRTP/FERA Companies.

8. The Committee approved the proforma for provisional notification of the varieties.

9. The Meeting ended with a Vote of Thanks to the Chair.

ANNEXURE I

List of participants who attended the 16th Meeting of the Central Sub-Committee on Crop Standards, Notification and Release of Varieties held at 2·30 P.M. on 15th June, 1990 under the Chairmanship of DDG (CS) ICAR, Krishi Bhavan, New Delhi

1. Dr. R.S. Paroda, *Chairman*
Deputy Director General (CS),
Indian Council of Agril. Research,
Krishi Bhavan, New Delhi-1.

2. Sh. J.P. Tandon,
Project Director (Wheat), IARI,
New Delhi-12.

3. Dr. Shanker Lal,
Project Director,
Directorate of Pulse Research, Kanpur.

4. Sh. E.A. Siddiq,
Project Director,
Directorate of Rice Research,
Hyderabad.

5. Dr. K. Mohan Naidu,
Director,
Sugarcane Breeding Institute,
Coimbatore.

6. Dr. J.S. Grewal,
Director,
Central Potato Research Institute,
Shimla.

7. Sh. M. Rai,
Additional Director General (Seeds),
ICAR, Pusa, New Delhi-12.

8. Dr. Y. Yogeswara Rao,
General Manager,
National Seeds Corporation, Pusa,
New Delhi-12.

9. Sh. M.K. Pogulwar,
Director,
Maharashtra State Seeds Certification Agency,
Pune, (Maharashtra).

10. Sh. R.N. Subba Reddy
Director,
A.P. State Seed Certification Agency,
Hyderbad, (AP).

11. Sh. Hari Krishna,
Director,
U. P. State Seed Certification Agency,
Lucknow.

12. Sh. A.S. Randhawa,
Director,
Punjab State Seed Certification Agency,
Chandigarh.

13. Sh. S.V. Arumugan,
Additional Director of Agriculture
(Extension), Tamil Nadu and Holding
Additional Charge of the Post of Director
of Seed Certification, Tamil Nadu.

14. Sh. Prem Singh Gill,
Joint Director of Agriculture (HYVP),
Punjab, Chandigarh.

15. Sh. V.P. Kulshrestha,
Dy. Director of Agriculture (Seeds),
Rajasthan, Jaipur.

16. Sh. M.S. Basu,
Project Coordinator (Groundnut),
National Research Centre for Groundnut,
Junagarh, Gujarat.

17. Sh. S.P. Hazra,
Project Coordinator (Forage crops),
I.G.F.R.I., Jhansi.

18. Dr. N. N. Singh,
Project Coordinator (Maize), Cummings
Research Laboratory, I.A.R.I.,
New Delhi.

19. Sh. B. S. Rana,
Project Coordinator (Sorghum), National
Research Centre for Sorghum, Hyderabad.

20. Sh. P. R. Kumar,
Project Coordinator (Rape seed & Mustard),
Haryana Agriculture University, Hissar.

21. Sh. S.M. Sharma,
Project Coordinator (Sesamum & Niger),
Jabalpur.

22. Sh. K.R. Chopra,
Mahendra Hybrid Seeds Corporation,
Jalna, Maharashtra.

23. Sh. R.S. Arora,
Century Seeds Private Ltd.,
Delhi.

24. Shri K. Jaggal,
Chief Seed Certification Officer,
Gurgaon, Haryana.

25. Shri N.S. Tunwar,
Dy. Commissioner (QC&T),
Ministry of Agriculture,
Department of Agriculture & Coopn.,
F/106, Shastri Bhavan, New Delhi.

26. Shri M.S. Shukla,
Dy. Seed Officer (QC),
Ministry of Agriculure,
Deptt. of Agri. & Coopn.,
New Delhi.

27. Shri D.S. Mishra,
STA (Seeds), Shastri Bhavan,
New Delhi.

ANNEXURE II

The details of important features of the varieties recommended for Release by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties in its 16th Meeting held on 15th June, 1990

1.	Crop	Black pepper (*Pipper nigrum* L.)
	Name of the variety	Subhakara (KS-27)
	Sponsored by	Director, National Research Centre for Spices (Indian Council of Agril. Research), Post Bag No. 1701, Marikunnu, Calicut - 673 012, Kerala.
	Parentage with details of its pedigree	High yielding selections from, 'Karimunda', Karimunda Selection No. 27.
	Recommended ecology	Performs well in humid tropical climate from sea level to 900 mts. elevation with well distributed annual rainfall of about 125-200 cm.
	Description of variety :	
	(a) Plant height	The vine can grow up to 15-20 metres column based on the height of the standard, but usually restricted to 5-6 metres under intensive cultivation as mono crop.
	(b) Distinguishing morphological characters :	
	Leaf length (cm)	12.3
	Leaf breadth (cm)	6.5
	Spike length (cm)	7.68
	Setting (%)	67.90
	No. of spikes/100 nodes	55.00
	1000 berry weight (g)	103.00
	1000 berry volume (cc)	100.40
	Dry recovery (%)	35.50
	Yield of fresh berries per vine (kg)—5 year old vine-Mean	4.20
	Max	7.90
	Reaction to Phytophthora capsici	Susceptible
	Reaction to Radopholus similis	Do.
	(c) Maturity	Approximately 7-7½ months after flowering (June-December)
	(d) Reaction to major diseases	Susceptible to *Phytophthora capsici* the causal organism of Phytophthora foot rot.
	(e) Reaction to major pests	(a) Susceptible to burrowing nematode (Radopholus similis) (b) Susceptible to 'Pollu' beetle (Longitarsus nigripennis)
	(f) Agronomic features	Highly adaptable and regular bearer. Can be planted in much closer planting (spacing : 2.5 × 1.5 m accommodating 2600 vine/ha) for further increase in the yield as a mono crop on non-living standards.
	(g) Quality of produce of grain	Has high essential oil which contribute to the flavour of the produce.
	(h) Reaction to stresses	Moderate tolerant to drought.
	Average yield under normal conditions	6720 kg of fresh pepper/ha (2352 kg dry pepper/ha) and has an yield potential of 12640 kg of fresh pepper/ha (4487 kg of dry pepper/ha) at 5th years after planting.
	Agency responsible for maintaining breeder seed	National Research Centre for Spices, Post Bag No. 1701. Marikunnu, Calicut - 673 012, Kerala.

2.	Crop	Cashew (*Anacardium occidentale* L.)
	Name of the variety	NRC-Cashew Selection-1
	Sponsored by	National Research Centre for Cashew, Puttur - 574 202, Dakshina Kannada, Karnataka.
	Parentage with details of its pedigree	This variety is a selection made from the seedling progeny of germplasm accession VTH 107 at CPCRI; Regional Station, Vittal. The original material is 3/8 Simhachalam obtained from the Cashew Research Station, Bapatla, Andhra Pradesh.

Recommended ecology : Coastal Karnataka

Description of variety :

(a) Plant height : 8.0 m (16 year old)

(b) Distinguishing morphological characters :

Plant habit : Erect
Branching : Intensive
Canopy shape : Medium
Leaf length : 16 cm
Leaf breadth : 9 cm
No. of laterals/leader : 2
Flowering time : Dec-Jan (Mid-season)
Flowering duration : 82 days (medium)
Harvesting time : March-April
Panicle shape : Conical
Panicle length : 27 cm
Panicle breadth : 26 cm
No. of fruits/panicle : 5
Coherance of nut with apple : Loose
Nut size : Medium (7.6 g)
No. of nuts/kg : 132
Shelling percentage : 28.8
Kernel count : 210 wholes/lb
Apple colour : Yellow
Apple shape : Pear
Apple size : Big (74 g)
Cumulative yield for the last 10 years (1979-1988) : 100.01 kg
Annual mean yield for the last 10 years : 10.00 kg
Cumulative yield for the last 5 years (1984-1988) : 57.50 kg
Annual mean yield for the last 5 years : 11.50 kg
Highest yield recorded : 25.30 kg

(c) Maturity group : Medium duration (82 days) of flowering

(d) Reaction to major diseases : No Major diseases in cashew

(e) Reaction to major pests : Moderately susceptible to Tea mosquito (Helopeltis antonii)

(f) Agronomic features : This is a mid-season variety which comes to flowering during Dec-Jan with a medium flowering duration of 82 days. Only clonal material (softwood grafts) are used for planting.

(g) Quality of produce of grain :

Counts & Nutritive value of Kernel :
(i) Kernel count : 210 wholes/lb
(ii) Kernel sugars : 8.926 (mg/100 mg defatted kernel flour)
(iii) Kernel phenols : 43.893 (μg/100 gm defatted kernel flour)
(iv) Kernel protein : 68.60 (g/100 g defatted kernel flour)
(v) Kernel lysine : 54.00 (μg/mg kernel protein) Compared to other cashew varieties, the kernel protein content is 1½ times more.

(h) Reaction to stresses : Not tested for stresses. But comes up well under rainfed conditions.

Average yield under normal conditions : Under normal conditions, a ten year old plant would give an average yield of more than 10 kg.

Agency responsible for maintaining Breeder Seed : National Research Centre for Cashew, Puttur-574 202, Dakshina Kannada Distt., Karnataka.

Specific recommendations, if any for seed production : Clonal multiplication through softwood grafting should be done by establishing scion bank for the variety.

3. Crop : Cotton (*Gossypium hirsutum* × *G hirsutum*)

Name of the variety : Mech-4

Sponsored by : Maharashtra Hybrid Seeds Co., Ltd., Jalna.

Parentage with details of pedigree : Female : 601 (Cytoplasmic male sterile)
Male : C-219 (Fertility restorer)

Recommended ecology : Mech-4 is suitable for cultivation in the cotton growing areas of Rajasthan, Gujarat & Marathwada region of Maharashtra.

Description of variety/Hybrid :

(a) Plant Height : 160 to 180 cms (depending upon soil type and date of planting)

(b) Distinguishing morphological characters :

- (i) Foliage : Dark Green, hairy
- (ii) Habit : Medium with 2-3 monopodia
- (iii) Leaf : Normal, 3-4 lobes, nectary present, slightly hairy
- (iv) Flower : Petal colour creamy with yellow anthers, petal spot absent
- (v) Boll : Large size (6-7 gms), slightly elongated, 4-5 locules, very good pluffy opening

(c) Maturity

- (i) Seeding to flowering : 40 to 50 days
- (ii) Seeding to seeding : 150 to 160 days

(d) Maturity group : Medium

(e) Reaction to major diseases : Found to be free from diseases like black arm, Alternaria leaf spot, anthracnose, root rot etc., under field conditions.

(f) Reaction to major pests : As this hybrid has hairy leaves and plant body, it is less affected by sucking pest complex. This hybrid is also less affected by boll worms.

(g) Agronomic features :

- (i) Resistance to lodging : Resistant
- (ii) Resistance to drought : Can withstand long dry spells

(h) Quality of produce :

- (a) Seed index : 14.5
- (b) Lint index : 8.0
- (c) Ginning % : 37.4 - 38.5

Lint characters :

(a) Eq. mean fibre length (mm) : 26.9
(in) : 1.06

(b) 2.5% span length
(mm) : 29.6
(in) : 1.18

(c) Uniformity ratio : 47.0%

(d) Fineness millitex : 150
micronaire : 3.8

(e) Percentage of mature fibres : 81

(f) Bundle strength Tenacity (g/t) 0 gauge : 46.1
1/8 gauge : 28.0
PSI 0 gauge lb/mg : 8.6

Description of parents of the hybrid	*Female* (*C*-601)	*Male* (*C*-219)
(a) Plant height	130-150 cms	120-130 cms
(b) Distinguishing morphological characters :		
(i) Habit	Bushy with 3-4 monopodia, hairy	Erect with 3-4 monopodia, smooth
(ii) Leaf	Dark green, hairy, nectary present, normal leaf, with 3-5 lobes.	Pale green, smooth, nectary absent, 3-5 lobes.
(iii) Flower	Petal colour creamy, anthers shrivelled with non functional (rudimentary) pollen grains.	Petal colour creamy, anther colour yellow.
(iv) Boll characters	Large, oval shaped with 4 to 5 locules smooth surface, boll wt. 6-7 gms.	Medium with 4-5 smoothsurface, boll wt. 5-6 gms.
(c) Days to 50% flowering	70-75 days	60-70 days
(d) Maturity	160-170 days	140-150 days
(e) Is there any problem in synchronization	No	No
(f) Reaction to major pests : Aphids	Tolerant	Tolerant
Jassids	Tolerant	Tolerant
Bollworm	Tolerant	Tolerant
(g) Reaction to major diseases	Both male and female are found to be free from attack of major diseases like Bacterial blight, Alternaria root rot, anthracnose etc.	
(h) Agronomic features :		
(i) Reaction to stress	Resistant	Resistant
(ii) Fertilizer responsiveness	Very good	Good
(iii) Seed rate per acre	400 gms (delinted)	250 gms (delinted)

Average yield under normal conditions : 2500 to 3000 kgs seed cotton/ha

Agency responsible for maintaining breeder seed : Research Division, Maharashtra Hybrid Seeds Company Ltd., Jalna - 431 203 (Mah.).

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4. Crop : Groundnut (*Arachis hypogaea* L)

Name of the variety : ICGS-37 (ICGV 87187)

Sponsored by : ICRISAT/ICAR

Parentage with details of its pedigree : Robut 33-1-1-1-B_1-B_1-B_1-B_1 B_1
(A selection from the natural hybrid population from Robut 33-1)

Recommended ecology : Irrigated Rabi/summer situation

Description of the variety :

(a) Plant height and breadth : 16.5 cm, 30.3 cm (Post-rainy season 1987/88, ICRISAT Center)

(b) Distinguishing morphological characters :

- (i) Cultivar group : Spanish
- (ii) Growth habit : Decumbent 2 to Decumbent 3
- (iii) Branching pattern : Sequential
- (iv) Pigmentation : Green
- (v) Number of primary branches (n+1) : 4-5
- (vi) Number of secondary branches (n+2) : 1-4
- (vii) Plant height and breadth : 16.5 cm and 30.3 cm (post-rainy season, 1987/88, ICRISAT Center)
- (viii) Maturity (post-rainy season) : 120 days (ICRISAT Center)
- (ix) Leaf characters :
  - (a) Size : Small-medium
  - (b) Shape : Elliptic
  - (c) Colour : Dark green
- (x) Flower colour :
  - (a) Standard : Orange
  - (b) Crescent : Yellow
  - (c) Crescent marking : Garnet
  - (d) Wing petal : Yellow
- (xi) Pod and seed characters :
  - (a) Pod beak : Slight-absent
  - (b) Pod constriction : Slight-moderate

- (c) Pod reticulation : Slight
- (d) Ridge : Absent
- (e) Seeds per pod : 2-1
- (f) Pod length : 25 mm
- (g) Pod breadth : 13 mm
- (h) Shelling (%) : 70
- (i) Seed length : 13 mm
- (j) Seed breadth : 8.8 mm
- (k) 100-seed mass (post-rainy season) : 53 g.
- (l) Seed colour : Tan

(c) Maturity : 110-120 days

(d) Maturity group : Medium

(e) Reaction to major diseases

- (i) Rust : Moderately resistant
- (ii) Late leaf spot : Moderately resistant
- (iii) Bud necrosis disease : Tolerant
- (iv) Peanut mottle virus : Yield loss less than that of TMV 2 and JL 24
- (v) Stem and pod rots : Similar to Kadiri 3 for stem rot, and Kadiri 3 and Gangapuri for pod rot
- (vi) A. flavus : Similar to susceptible cultivar TMV2

(f) Reaction to major pests :

- (i) Groundnut leafminer : Susceptible
- (ii) Thrips : Moderately resistant
- (iii) Reaction to other insects : Not known

(g) Agronomic features

- (i) Drought : Tolerant to end-of-season drought
- (ii) Adaptability : Adapted to irrigated Summer Groundnut Zone II

(h) Quality of produce : Excellent pod with tan coloured seeds

- (i) Oil content of seed : 48%
- (ii) Protein content of seed : 23%
- (iii) Fodder value : Good quality fodder

(i) Reaction to stresses

- (i) Drought : Tolerant to end-of-season drought
- (ii) Photoperiod : Insensitive to photoperiod

Average yield under normal conditions : 3000-4000 kg/ha (under good management)

Agency responsible for maintaining breeder seed : ICRISAT, Patancheru P.O. 502 324, Andhra Pradesh

Specific recommendations if any, from seed production : Field selected for seed production should not have had groundnut crop in the preceding 2 years.

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5. Crop : Guara (Cluster bean) (*Cyamopsis tetragonoloba* (L.) Taub)

Name of the variety : Guara-80

Sponsored by : Punjab Agricultural University, Ludhiana

Parentage with details of its pedigree : Selection from the progeny of a cross between FS-277 × Strain No. 119.

Recommended ecology : Suitable for arid and humid areas.

Description of variety

(a) Plant height : 110.3 cm.

(b) Distinguishing morphological characters :

- (i) Profusely branched
- (ii) More leafy
- (iii) Higher number of pods per plant
- (iv) Longer duration

(c) Maturity :

- Seeding to flowering : 75-80
- Seed to Seed : 125-160
- depending upon the region

(d) Maturity group : Very late

(e) Reaction to major diseases : Guara-80 is comparatively more resistant to diseases caused by Xanthomonas *cyamopsidis* and *Alternaria cyamopsidis*.

(f) Agronomic features : Comparatively more resistant to lodging, no shattering of seed, suitable for normal and late sown conditions, 18-20 kg. seed is required for one acre. Suitable for sowing under both irrigated and rainfed conditions from middle of June to middle of July. Suitable for intercropping with bajra and as a forage crop suitable for growing in mixture with sorghum.

(g) Quality of produce : Guara-80 has comparatively higher dry matter yield, crude protein yield and in vitro dry matter digestibility (IVDMD) than HFG-119. More over it has higher gum percentage as compared to the check variety.

(h) Reaction to stresses : Suitable for rainfed conditions.

Average yield under normal conditions (in kg/hectare) :
(i) Green fodder yield : 26830 kg.
(ii) Dry Matter yield : 4660 kg.
(iii) Seed yield : 1468 kg.

Agency responsible for maintaining breeder seed : Punjab Agricultural University, Ludhiana

Specific recommendations if any for seed production : Use 8 kg. seed per acre to get higher seed yield

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6. Crop : Mustard (*Brassica junceu L. Czern & Coss.*)

Name of the variety : Narendra Rai (NDR 8501)

Sponsored by : N.D. University of Agriculture & Technology, Kumarganj, Faizabad.

Parentage with details of its pedigree : Selection from the material collected from Atwa (U.P.)

Recommended ecology : Irrigated conditions.

Description of variety

(a) Plant height : 140-160 cm.

(b) Distinguishing morphological characters

Growth habit : Semi-erect

Colour of leaf : Green

Shape of leaf : Medium with acute lobe

Leaf surface : Sparsely hairy

Stem shape and surface : Round and stiff surface non-hairy

Colour of stem : Green

Nodal colour : Pinkish

Branching habit : Semi-open branching at mid height, Number of Primary branches 4-6.

Days to 50% flowering : About 45 days

Size and colour of flower : Normal size, yellow petals

Siliqua characters : Size is medium containing 10-12 seed, surface is beaded

Seed size : Bold (more than 5 g)

Seed colour : Dark brown

(c) Maturity : Around 125 days

(d) Maturity group : Early

(e) Reaction to major diseases : Moderately resistant to Alternaria blight and white rust, and resistant to downy mildew.

(f) Reaction to major pests : It is moderately resistant to aphids, sawfly and leaf miner.

(g) Agronomic features :
(i) It is resistant to lodging.
(ii) It possess bold seeds, stiff siliqua and is resistant to shattering.
(iii) It responds to nitrogen fertilization up to 120 kg/ha. However, 80 kg N/ha is economical.
(iv) Suitable for early as well as late sown conditions.
(v) Optimum seed rate is 5 kg/ha.

(h) Quality of produce : Seeds are attractive brown coloured which are bolder than all the national varieties.

(i) Reaction to stresses : It is tolerant to saline/alkaline soils.

Average yield under normal conditions	1333.14 kg/hectare.
Agency responsible for maintaining breeder seed	Seed production Unit of N.D. University of Agril. & Tech., Narendra Nagar (Kumarganj), Faizabad.
Specific recommendation if any, for seed production	Seed production has to proceed on the same lines as specified for other varieties of the same group.

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7. Crop	Sesame (*Sesamum indicum L*)
Name of the variety	RT 46
Sponsored by	Agricultural Research Station, Rajasthan Agril. University, Mandor, Jodhpur-342 304.
Parentage with details of its pedigree	T 12 × Punjab Til No. 1.
Recommended ecology	Suitable for rainfed as well as irrigated conditions, seed yield levels obtained with canal irrigation were 1138 kg/ha in 1988 and 1259 kg/ha in 1989 at Hanumangarh.
Description of the variety	
(a) Plant height	100-125 cm.
(b) Distinguishing morphological characters	Bicarpilate solitary capsule/axil is shorter and broader, bears dense hairs and white seeds. The flowers are hairy with light pink tip. Stem is green, tetrangular and pubescent. Its leaves are petiolate, decussate, basal leaf ovate under upper leaves. Germination vigorous and emergence rapid with better early growth.
(c) Maturity	76-85 days
(d) Maturity group	Medium maturity
(e) Reaction to major diseases	The proposed variety is resistant to dreaded oozing complex which destroys the crop at will. Variety is also resistant to Macrophomina root rot, a serious problem in sesame growing areas. Its resistance to Alternaria leaf spot was reported by Hisar centre due to wax and phenols. The proposed variety has showed less percent infestation against Antigastra and Gall fly in field conditions.
(f) Agronomic features	RT 46 given high response to Nitrogen upto @ 40 kg/ha and optimum intra row spacing found was 15 cm.
(g) Quality of produce	It is white seeded variety preferred by the consumers with 49.4 per cent oil content.
(h) Reaction to stress	RT 46 is more stress tolerant than the national check TC 25.
Average yield under normal conditions	600-800 kg/ha.
Agency responsible for maintaining breeder seed	Senior Scientist (Oilseeds), Rajasthan Agriculture University, Agricultural Research Station, Mandor, Jodhpur.

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8. Crop	Bajra (*Pennisetum typhoides* (Burm)
Name of the variety	HHB 67
Sponsored by	Haryana Agricultural University, Hisar-125004.
Parentage with details of its pedigree	MS 843A × H77/833-2
Recommended ecology	In multiple and inter-cropping system
Description of variety	
(a) Plant height	Medium
(b) Distinguishing morphological characters	Thin stem, medium narrow leaves typical conical earhead, medium bold seed size and extra early in maturity.
(c) Maturity	42± 2 days (Seed to 50% flowering) 60± 2 days (Seed to seed)
(d) Maturity group	Extra early
(e) Reaction to major diseases	Highly resistant to downy mildew both under field and as well as sick plot conditions except for A.P.
(f) Agronomic features	Resistant to lodging and shattering, highly responsive to fertilizer suitable for early normal and late planting, normal seed rate.
(g) Quality of produce	Very good
(h) Reaction to stresses	Highly tolerant to moisture stress.

Description of parents of the hybrid	*Female* MS 843A	*Male* H77/833-2
(a) Plant height (cm)	Dwarf (70-100)	Medium dwarf (100-160)
(b) Tillering	High (non synchronous tillering of wider spacing)	High with high nodal tillers
Stem thickness	Medium thick	Thin
Leaf : (a) size & shape	Medium, medium broad	Small, narrow & thin
(b) Colour	Dark green	Light green
Ear : (a) Length	Medium (19 cm)	Small thin (13 cm)
(b) Girth	Thick loose	Thin dense
Grain size	Bold	Small
Seed set under different environments	No problem	No problem
50% **flowering (days)**	40-55	40-52
(i) **Pollen shadders**	No problem	---
Synchrony in flowering behaviour	In general, no problem is visualised. However, the male parent namely H77/833-2 may flower late by seven days under certain environmental conditions such as the one encountered during summer season. In June, July planting, there is perfect synchrony. As such it would be advisable to plant 4 rows of H77/833-2 about a week early at least on the periphery of the seed production plot. Resort to staggard planting under such conditions, jerking of the main heads in the female parent alongwith differential fertilizer application is also helpful.	
Average yield normal condition	2669 kg/hectare.	
Agency responsible for maintaining breeder seed	HAU/ICRISAT.	

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9. **Name of the crop**	Bajra
Name of the variety	VBH-4 (MH-229)
Sponsored by	Vijay Seeds Co. Pvt. Ltd., Jalna.
Parentage with details of its pedigree	BVMS IA × VBR - 19
Recommended ecology	It is recommended for growing during the rainy season in all districts of Zone B.
Description of the hybrid	
(a) Plant height	165-170 cm.
(b) Distinguishing Morphological characters	Four to five productive tillers and compact cylindrical earheads without bristles
Reaction to stresses	No such expt. was conducted however this hybrid ranked first in yield in the Coordinated Advanced Hybrid Trial in the State of Rajasthan on an average of five locations during Kharif 1988-89. These locations were Jodhpur, Mandor, Jaipur, Fatehpur, Shekavati and Navgaon.

Description of parents of the Hybrid	*Female* BVMS IA	*Male* VBR-19
(a) Plant height (cms)	70-75	155-160
(b) Distinguishing morphological characters	8-10 basal tillers	6-8 basal tillers
(c) Days to 50% flowering	50-55 days	40-50 days
(d) Maturity	95-100 days	85-90 days
(e) Reaction to major diseases under field conditions.	Resistant to Downy Mildew	Resistant to downy Mildew.
(f) Reaction to major pests	Pest incidence is negligible	Pest incidence is negligible.
(g) Agronomic features	Resistant to lodging	Resistant to lodging.
(h) Reaction to stresses	Remains sterile under different agro-ecological conditions.	Possesses good pollen shedding.

Average yield in qtls. per hec.	25.69
Agency responsible for maintaining breeder seed	Vijay Seeds Co. (P) Ltd., Jalna.
Quantity of breeder seed in stock	20 qtls. seeds of each of the two parents are available besides 1000 qtls. of hybrid seed for distribution to cultivators.
Specific recommendations if any for seed production	It is advisable to plant female seeds about 10 days earlier than male.

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10. Name of the crop	Wheat (*Triticum aestivum* L.)
Name of the variety	HD-2501
Sponsored by	Director, Indian Agricultural Research Institute, New Delhi.
Parentage with details of pedigree	HD-2189 × HD-2160
Recommended ecology	Late sown, high fertility, irrigated condition.
Description of the variety/hybrid :	
(a) Plant height	65-94 cm (Single dwarf)
(b) Dinstinguishing morphological characters	Spike, fully bearded. White, glaborous, long and wide glumes with level led shoulder. Spike is square, tapering, lax, long and nonwaxy. Leaves long and wide.
(c) Maturity (range) seeding to flowering, seed to seed	41-63 days (seeding to flowering) 92-104 days (seed to seed)
(d) Maturity group	Medium early.
(e) Reaction to major diseases	Peninsular Zone is most vulnerable to the epidemic of both stem and leaf rusts. The existing checks and cultivars have already succumed to these diseases. HD-2501 fully meets these requirements.
Reaction to stresses	HD-2501 behaves similarly to the existing cultivars in its tolerance to very late sown conditions in the Coordinated agronomic trials.
Average yield under normal conditions (yield in kg/ha)	In varietal trials, HD-2501 has given an average grain yield of 31.6 q/ha.
Agency responsible for maintaining breeder seed	IARI, New Delhi-110012.

ANNEXURE III

Important features of the Varieties recommended for Notification in the 16th Meeting of the Central Sub-Committee on Crops Standards, Notification and Release of Varieties

1. Crop	Cotton (*G. hirsutum* L.)
Name of the variety	Abadhita-1
Parentage with details of its pedigree	JK-97 and JK-44 agronomic base varieties & 36 different chosen cotton genotypes.
Breeder/Institute responsible for maintaining breeder's stock	Dr. S.N. Kadapa, Senior Scientist (Cotton) and South zone Co-ordinator, A.R.S., Dharwad.
Description of the variety :	
(a) Plant height	120-130 cm.
(b) Distinguishable morphological characters	2-3 monopodia, 17-20 sympodia held at more than 80° angle to the main branch. Plant body and leaves parrot green, leaves three lobed, central lobe broadly angulated and small size. No leaflet near the axil of the leaf. Creamy to yellow corolla and pollen. Bolls oval shaped 4 loculed rarely 5 loculed apex pointed. Bracts small, 1/3 size of the boll with 5-6 bracteole teeth. The central teeth of bract short and drying as boll maturity. Stem tip 50% less hairy than Laxmi with hard stem-tip.
(c) Maturity group	Early (140-145 days)
Description of the parents of hybrids	Not applicable
Description atleast two identifiable and distinguishable morphological characteristics of the variety	The variety is distinguished from its parrot green leaves and body colour, bracts very small and stem tip hard.
Disease and pest resistance	Tolerant to jassids and highly tolerant to thrips, aphids and bollworms (Heliethis armigera, Enrias spp. and Pink). It is also resistant to Alternaria and moderately susceptible to blackarm and stem borer weevil drought resistant also.
Recommended ecology	Rainfed areas of Karnataka, comprising of Belgaum, Dharwad, Bellary, Shimoga, Chitradurga, transition tract of Gulbarga and Summer irrigated areas of Bijapur, Gulbarga, Belgaum and South Maharashtra, Tamil Nadu and Orissa.
Yield :	
(a) Commercial product	Under no plant protection 11.5 qt./ha. kapas with one plant protection 19.2 qt/ha with two plant protection, 21.8 to 24. 2 qt/ha under assured rain fall conditions.

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2. Crop	Cotton (*G. hirsutum*)
Name of the variety	Arunabha (JK-119)
Parentage with details of its pedigree	Derivative from multiple cross of (JK-97 × JK-97-418) × (JK-125-2-5 × MCU 5) × DBS-11-4.
Breeder/Institute responsible for maintaining breeder's stock	A.R.S., Dharwad.
Description of variety :	
(a) Plant height	150-160 cms.
(b) Distinguishing morphological characters	1-3 monopodia depending upon the area available for each plant. The stem is more red pigmented than other varieties. No. of bracteole teeth 7-8. Bracts are smaller than boll size. Petals cream to white pollens yellow. Style slightly longer than the anther column. Leaves three-five lobed with central lobe heart shaped and more than twice as long as breadth. Leaves turning reddish from when the boll subtended by the leaf reaches malinity. Bolls held up right on the sympodial branch and 4-5 loculed. Boll shape is slightly oval and roundish and slightly beaked. Boll opening wide with pluffy cotton.
(c) Maturity group	Early
Description of the parents of the hybrids	Not applicable
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	The variety is characterised by the cream to white petal and yellow anthers and pollen.

Disease and pest resistance	Tolerant to jassids and highly tolerant to bollworms
Recommended ecology	Irrigated areas of Karnataka, comprising of Belgaum, Dharwad, Raichur, Bijapur, Bellary, Shimoga, Gulbarga, Chitradurga and South Maharashtra.
Yield (in qt./Hectares):	
(a) Commercial prod'	38-42 qt/ha kapas.
(b) Seed	—

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3. Crop	Cotton
Name of the variety	G. Cot. DH-9 (GDA 149)
Parentage with details of its pedigree	4011 × 824 Pedigree : 4011: 3943/5021 × (Digvijay × Raniben) F.22 824: Reselection from long staple Gaorani cotton.
Breeder/Institute responsible for maintaining breeder's stock	Research Scientist (Cotton), Main Cotton Research Station, Gujarat Agril. University, Surat-395 007.
Description of the hybrid :	
(a) Plant height	150 to 180 cms.
(b) Distinguishing morphological characters	
(i) Foliage	Green, narrow and hairy leaves, almost all leaves sected with 5 lobes, lob cut is more than ½.
(ii) Habit	Erect with 4-6 effective monopodia on main stem. First fruiting branch starts from 10-15 nodes.
(iii) Leaf characters and colour	Narrow leaves, sected with almost in five lobes. Lob cut is more than ½.
(iv) Flower	Corolla yellow, with dark purple spot. Red anther filament.
(v) Pollen	Dark yellow in colour.
(vi) Petal spot	Dark red petal spot present.
(vii) Bolls characters	Bolls are medium in size. Pitted surface and small beak at the tip.
Maturity	
(i) Seeding to flowering	70-80 days
(ii) Seeding to boll-opening	120-140 days
(iii) Seeding to seeding	180-200 days
Description of the parents of the hybrid	

Characters	*Female* (4011)	*Male* (824)
(i) Height	70-80 cms.	160-200 cms.
(ii) Habit	Monopodial dwarf & busy monopodia at acute angle on main stem, sympodieal branch start at 10-12 node.	Erect & open growth habit with 4-5 effective monopodial branch start at 8 to 10 node.
(iii) Foliage	Green in colour hairy leaves sected with 3-5 lobes. Lobe cut is less than ½	Dark green in colour. Light hairy leaves sected with 3-5 lobes cut is more than ½.
(iv) Flower	Corolla yellow with dark purple spot. The anther filament colour is yellow.	Corolla yellow with dark purple spot. The anther filament colour is red.
(v) Bolls	Medium in size shape roundish to cylindrical and pitted. Surface with 3 to 4 lobes.	Bigger in size elongated and pointed at apex. Pitted surface with 3 to 4 lobes.
(c) Maturity		
(i) Sowing to flowering	80-100 days	90-110 days
(ii) Sowing to boll opening	140-160 days	150-170 days
(iii) Sowing to pulling	180-200 days	200-220 days

Whether there is any problem about synchronization ? : There is no problem of synchronization.

Describe at least two identifiable and distinguishable morphological characteristics of the hybrid and its parents :

Characters	*Hybrid*	*Female*	*Male*
(i) Anther filament colour	Reddish	Yellowish	Reddish
(ii) Petiole colour at leaf lamina juncture	Light reddish to yellowish	Creamy	Dark red
(iii) Petiole Colour	Greenish	Yellowish greenish	Brownish

Maturity group : Medium (No such specific classification exists).

Disease and pest resistance :

Pest	*Hybrid*	*Female*	*Male*
Aphids	—	Moderately resistant	Moderately resistant
Spotted bollworm	—	Moderately susceptible	Moderately susceptible
Thrips	—	—	—
Jassids	Tolerant	Resistant	Resistant
Heliothis	—	Susceptible	Susceptible
Mites	Tolerant	Susceptible	Susceptible
Prodenia	Tolerant	—	—
Bollworm	Tolerant	—	—

Diseases	*(In field condition)* *Hybrid*	*Female*	*Male*
Blackarm	Resistant	Resistant	Resistant
Wilt	Tolerant	Do not appear	Do not appear
Root rot	Tolerant	Moderately resistant	Moderately resistant
Alternaria leaf spot	Resistant	—	—
Grew mildew	Moderately Resistant	—	—
	(Under controlled condition)		
Blackarm	—	Resistant	Not studied
Wilt	—	Moderately susceptible	,,
Root rot	—	Not studied	,,

Recommended ecology : Entire Gujarat State (for irrigated as well as rainfed condition). A.I.C. C.I.P. Workshop has also recommended for M.P. held at Rahuri in May, 1988.

Yield (in kg/hectare)

(a) Commercial product :	Seed Cotton	*G. Cot DH-9*
	(a) Average of trial	2109
	(b) Maximization	3000-3500
	Lint yield	
	(a) Av. of trial	719
	(b) Maximization	1977-2300
(b) Seed	*Cotton seed*	
	(a) Av. of trials	1390
	(b) Maximization	1977-2300

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4. Crop : Cotton

Name of the variety : G. Cot. 15

Parentage with details of its pedigree : Chandrolla × Sanjay

Pedigree : Chandrolla—Selection from non-descript bulk
Sanjay—(G. 520 × Jarilla)

Breeder/Institute responsible for maintaining breeder's stock : Research Scientist (Cotton), Main Cotton Research Station, GAU, Surat-395 007.

Description of variety :

(a) Plant height : 100-110 cms.

(b) Distinguishing mophological characters :

(i) Foliage : Green, hairy almost all leaf sected with 5 lobes, Lob cut is more than ½ the colour of Main stem as well as branches is light green.

(ii) Habit : Erect with 2-3 effective monopodis and 8-12 sympodial branches start from 10-12 nodes.

(iii) Leaf characters & colour : Light green

(iv) Flower : Petal white colour and bracts are green

(v) Pollen : Yellow in colour

(vi) Petal spot : Light red, petal spot present

(vii) Bolls character : Bolls are partially pitted conical shape.

Describe atleast two identifiable and distinguishable morphological characteristics of the variety :

Flower : Petal : white, bract : green

Pollen : Yellow in colour

Petal spot : Light red, petal spot present

Bolls : Partially pitted and conical shape

Maturity group : Early (No such specific classification exists in cotton.)

Disease and pest resistance : *Reaction to pests/Disease*

Major disease in field condition

	Grade	*Reaction*
(1) Root rot	Nil	**Disease free**
(2) Bacterial blight	0	-do-
(3) Fusarium wilt	Nil	-do-
(4) Alternaria	0	-do-

Fairly tolerant to Bollworms and Sucking pests.

Recommended ecology : Mathio, Cotton Zone consisting of Amreti, Bhavnagar & Southern parts of Rajkot.

Yield (in kg/hectares) :

(a) Commercial product :

Seed cotton yield	*G. Cot.* 15
(a) Av. of rest trial	1108
(b) Maximization	874
Lint yield	
(a) Av. of trial	378
(b) Maximization	298

(b) Seed :

Cotton Seed	
(a) Av. of trials	730
(b) Maximization	576

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5. Crop : Cotton (*hiresutum* × *barbadense*)

Name of the variety : NHB-12

Parentage with details : FP : NS-15 Selection from CP-15/2 culture from Coimbatore.
MP : SB-289-CF-Cream flower selection*
(from SB-298-E)

Breeder/Institute responsible for maintaining breeder's stock : Cotton Specialist/Cotton Breeder/Cotton Research Station, Nanded.

Description of hybrid :

Plant height (cm) : 180-200

Habit : Bushy

Monopodia : 2-4

Foliage : Dark green, Deeply cut 3-5 lobes.

Corolla : Cream

Anther colour : Dark yellow

Petal spot : May or may not present

Bolls : Roundish with prominant shoulders.

Seeds : Greenish Furry

Duration (Seed to Seed) : 180-190 days.

Description of the parents of the hybrid : Please see in the table given below:

Whether there is any problem of Synchronization : No problem.

Describe atleast two identifiable and distinguishable morphological characteristics of the variety :

	Hybrid	FP	MP
Petal Colour	Cream	Cream	Cream
Anther colour	Dark yellow	Yellow	Dark yellow

Maturity group : Medium to late (180-190 days).

Description of the parents of the Cotton NHB-12 hybrid

Characters		Female parent N.S. 15	Male parent SB-289-CF
Plant height (cm)	:	100-150	150-200
Habit	:	Medium tall with short internode, erect towards tip	Erect, Sympodial
Monopodia	:	1-4	Zero
Foliage	:	Green, Medium sized leaves with 3-5 lobes, medium hairy lamina, open canopy	Dark green mostly lobes, deep cut
Petal colour	:	Cream	Cream
Anther colour		Yellow	Dark yellow
Petal spot	:	Absent	Present (Expression varying/may absent.)
Bolls	:	Medium, Slightly elongated, 4-5 gm weight.	Medium, oblong to round, tip pointed defective opening 3-4 gm.
Seeds	:	Greenish white, Fuzzy seed index 10 to 11 g.	Lintless, seed index 9-10 g.
Duration (Seed to seed) (Seed to flower)	:	160-170 days; 50-55 days	180-200 days; 55-65 days
Reaction to major diseases	:	Tolerant to alternaria	Susceptible to black arm
Reaction to major pests	:	Moderately susceptible to jassids and bollworms	Susceptible to sucking pests and moderately to bollworms.

Desease and pest resistance : *Reaction to major disease*

Tolerant to *verticillium* wilt and new wilt susceptible to Alter naria which can be effectively controlled by recommended fungicidal sprays.

Reaction to Major pests

Moderately susceptible to jassids and bollworms. DCH-32 is more susceptible to jassids and moderately to bollworms.

Recommended ecology : Assured rainfall area of Marathwada, with black cotton soils and irrigation as and when necessary.

Yield (in kgs./hectares) :

(a) Commercial product Lint kg/ha 507

(b) Seed : Seed kg/ha 1035

6. Crop : Cotton (*G. hirsutum*)

Name of the variety : Priya (NA 920)

Parentage with details of its pedigree : A close derivative of N A 332 × (C.P.D. 9-1 × 0892 B)

Breeder/Institute responsible for maintaining breeder's stock : Regional Agricultural Research Station, Nandyal.

Description of the variety : Medium tall (100-120 cms), shorter duration variety (160 days), bushy plant habit with hairiness on stem and leaves, 2-3 monopodia, petal colour cream white, Buff pollen, medium size roundish boll with 4-4.5 gms boll weight seed fuzzy. A medium staple cotton having mean fibre length of 24.7 mm and mean ginning percentage of 38.3 and spins 40's counts. Recorded 1570 kg of kapas per hectare (i.e) 25% increased yield over Vijayalaxmi. Moderately tolerant to BLB and tolerant to jassids.

Description of the parents of the hybrid. Is there any problem of Synchronization?	It is straight variety. Hence synchronisation does not arise.
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	(1) Plant canopy is of bu nature. (2) Foliage is pale green with medium size leaves. Boll is in medium size roundish and slightly fitted.
Maturity group	Early in duration (160 days)
Disease and pest resistance	Fairly tolerant to jassids and moderately tolerant to bacterial blight.
Recommended ecology	Suitable for cultivation in black soils of Rayalaseema region.
Yield (in kg/ha) :	
Average yield for 5 years	
(1) R.A.R.S., Nandyal	1591 kg/ha (32% increased yield over Vijayalaxmi)
(2) AICCIP, Nandyal	1464 kg/ha (34% increased yield over Vijayalaxmi)
(3) AICCIP, Dharwad	1562 kg/ha (16% increased yield over Sarada)
(4) Minikits, Kurnool (Dist.)	1444 kg/ha (17% increased yield over Vijayalaxmi)
(5) Large scale demonstration	1791 kg/ha in Kurnool (Dist.) (25% increased yield over Vijayalaxmi)

7. Crop	Foxtail Millet
Name of the variety	Lepakshi (AK-132-1)
Parentage with details of its pedigree	Selection from local collections.
Breeder/Institute responsible for maintaining breeder's stock	Junior Breeder, Agricultural Research Station, Anantapur - 515 001 (AP)
Description of the variety :	
(a) Plant height	95 cms
(b) No. of tillers/plant	4 to 6
(c) Panicle length	19 cms
(d) Shape of panicle	Long cylindrical, thin compact drooping tapering tip.
Describe at least two identifiable and distinguishable morphological charateristics of the variety	(1) Compact drooping length of panicle (2) Dense medium bristles
Maturity group	83 days
Disease and pest resistance	Tolerant to Blast disease and Army worm incidence
Recommended ecology	Specially suited for shallow light red soils zone of Semi Arid Tropics of Andhra Pradesh.
Yield (in kgs/ha) :	
(a) Commercial product	—
(b) Seed	17.4 Qtls/ha.

8. Crop	Mustard (*Brassica juncea*)
Name of the variety	Gujarat Mustard-1
Parentage with details	MR 71-3-2 × TM-4
Breeder/Institute responsible for maintaining breeder's stock	Research Scientist (Castor & Mustard), Gujarat Agril. University, Sardar krushinagar (Gujarat).
Description of variety	Plants of Gujarat Mustard-1 are medium in height, 7 to 10 days earlier in maturity and bears more pods and branches than the well adopted variety 'Varuna'.
Describe at least two identifiable and distinguishable morphological characteristics of the variety	(i) Plant erect and stout with more basal branches and small leaves (ii) Dwarf (130 to 150 cm) early (flowering 35 to 40 days)
Maturity group	Medium
Disease and pest resistance	The variety is slightly tolerant to powdery mildew and white rust. But equally suceptible to aphids under field condition in comparision to Varuna as well as adopted variety.

Recommended ecology :

(a) Climate	:	Cold and dry
(b) Soil	:	Sandy to medium black
(c) Sowing time	:	From 15 Oct. to 25 October
(d) Spacing	:	Inter and intra row spacing 45 cm × 10 cm to maintain this spacing, seedrate 3.5 kg/ha.
(e) Fertilizer	:	50 kg Nitrogen and 50 kg P_2O_5 per hectare with splitting of half of N after 45 days of sowing.
(f) Irrigation	:	Four irrigation at 15, 45, 60 & 70 days after sowing are sufficient in case of sandy soil.

Yield (in kg/ha) :

(a) Commercial product	:	2281
(b) Seed	:	1500

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9. Crop	:	Maize (*Zea mays* L.)
Name of the variety	:	Prabha
Parentage with details of its pedigree	:	From highly homozygous and homogenous inbred material, *crosses* among dent and flint types were effected and four composites viz. G-43 (Dent), G-44 (Flint), G-45 (dent) & G-46 (Flint) were developed. Similarly from CIMMYT and other international heterozygous and heterogenous dent pools and flint pools, another four composites viz. G-47(D), G-48(F), G-49(D) and G-50 (F) were developed. Later the intermediates between dent and flint types amongst these eight composites were separated and maintained as separate composite called 'G-51'. In order to incorporate resistance to turcicum leaf blight disease, it was crossed with turcicum resistant KUI lines and after two back crosses, the material was subjected to Mass Selection from which the Present composite 'G-57' was developed.
Breeder/Institute responsible for maintaining breeder's stock	:	Maize Breeder, Agricultural Research Station, Arabhavi - 591 318

Description of variety :

(a) Plant height	:	185 cms (Average)
(b) Distinguishing morphological characters	:	Medium tall plant with stout stem and broad thick green leaves
(c) Maturity :		
(i) Days to 50% tasselling	:	53-57 days (Average 55 days)
(ii) Days to 50% silking	:	55-63 days (Average 59 days)
(iii) Seed to seed	:	110-115 days during Kharif season
(d) Maturity group	:	Full season composite (Late type)
(e) Grain type	:	Semi flint to dent with orange to orange yellow colour
(f) Silk colour	:	Predominantly green
(g) Glume colour	:	Green to Green with purple tinge
(h) Tassel size and shape	:	Medium to large; open to semi-compact
(i) Anther colour	:	Predominantly yellow
(j) Cob colour	:	White
(k) Husk colour	:	Green
(l) Ear height	:	85 cms (Average)
(m) 1000 Grain weight	:	300 gm (Average)

Description of the parents of the hybrid	:	Not applicable
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	(a) Stout stem with broad thick green leaves. (b) Bold sized orange to orange yellow coloured seeds.
Maturity group	:	Late (Full season)
Disease and pest resistance	:	Moderately resistant to major diseases and stem borer and on par with tha of Deccan-103 hybrid.
Recommended ecology	:	Recommended for growing under irrigated condition as an entire crops.

Yield (in kgs/ha) :		
(a) Commercial product	:	5000 - 6000 kg/ha
(b) Seed	:	3000 - 4500 kg/ha

10.	Crop	:	Rice (*oryza sativa*)
	Name of the variety	:	Pawana
	Parentage with details of its pedigree	:	Pusa 33 × IR 28. Pusa 33 is a semi dwarf, early, scented, high yielding variety developed at IARI, from the cross improved Sabarmati × Ratna. IR 28 is semi dwarf, midlate, multi resistance, high yielding variety developed by I.R.R.I.
	Breeder/Institute responsible for maintaining breeder's stock	:	Agril. Research Station, Vadgaon (Maval), Distt. Pune, Maharashtra State
	Description of variety	:	Early duration having maturity period 115 to 120 days, semi dwarf, non-lodging having long slender scented grain, resistant to leaf-scald, suitable for direct sown as well as transplanted condition.
	Description of the parents of the hybrid	:	Not applicable
	Maturity group	:	Early
	Disease and pest resistance	:	Resistant to blast and moderately resistant to leaf-scald and having tolerance to major pests under field conditions.
	Recommended ecology	:	This variety is recommended for rice growing areas of Ghat and Sub Mountain Zone in the jurisdiction of Mahatma Phule Agril. University, Rahuri.
	Yield (in kgs/hectare)	:	3500 to 4000 kg/ha
	(a) Commercial product	:	——

11.	Crop	:	Paddy (*oryza sativa*)
	Name of the variety	:	Kundalika (IET-3228)
	Parentage with details of its pedigree	:	Ratnagiri 24 × IET 3228. Ratnagiri 24 is semi dwarf, early fine, high yielding variety developed at Agril. Research Station, Ratnagiri, (Maharashtra) from the cross Zinia-63 × T (N)-1 IET-3228 is dwarf midlate superfine.
	Breeder/Institute responsible for maintaining breeder's stock	:	Agricultural Research Station, Vadgaon (Mabal) Distt. Pune, Maharashtra State.
	Description of variety	:	Early duration having maturity period of 120 to 125 days superfine, having short slender Karnel, resistant to blast with good cooking quality. The cooked rice is free and tasty, nonlodging and non shattering.
	Maturity group	:	Early
	Disease and pest resistance	:	Resistant to blast and having resistant to major pests under field conditions
	Recommended ecology	:	This variety is recommended for rice growing areas of Ghat and Sub Mountain Zone in the jurisdiction of Mahatma Phule Agril. University, Rahuri
	Yield (in kg/hectare) :	:	3500 to 4000 kg/hectare
	(a) Commercial product		
	(b) Seed	:	50 quintals

12.	Crop	:	Paddy (*Oryza sativa*)
	Name of the variety	:	Terna
	Parentage with details of its pedigree	:	Local selection
	Breeder/Institute responsible for maintaining breeder's stock	:	Rice Breeder, R.P.R.S., Tuljapur MAU, Parbhani
	Description of variety	:	Mid tall, white husk and long slender grain
	Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	White husk, white glume, slight awns with pink tinge at the tip of grain
	Maturity group	:	Early group
	Disease and pests resistance	:	Tolerant to blast agarbatta disease and stem borer
	Recommended ecology	:	Marathwada region
	Yield :		
	(a) Commercial product	:	22 to 25 quintals/ha
	(b) Seed	:	—

13. Crop	:	Paddy (*oryza sativa*)
Name of the variety	:	Krishnaveni (MTU 2077)
Parentage with details of its pedigree	:	Sowbagya/ARC 5984 MTU 2077 is the designation of variety. It carries IET 11380. Sowbagya is derivative of Mahsuri and Vijaya and ARC 5984 is tolerant to BPH and GM.
Breeder/Institute responsible for maintaining breeder's stock	:	Rice Breeder, Agricultural Research Station, Maruteru - 534 122, Andhra Pradesh Agricultural University.
Description of variety/hybrid	:	Krishnaveni (MTU 2077) is a long duration (150 days) and semi dwarf type with all plant parts green in colour. Rice is classified medium slender. It is tolerant to BPH.
Describe at least two identifiable and distinguishable morphological characteristics of the variety	:	(a) Grain is brown in colour (b) All parts of the plant are green in colour
Maturity group	:	Late (150 days)
Disease and pest resistance	:	Tolerant to BPH
Recommended ecology	:	BPH endemic and low lying areas in Andhra Pradesh
Yield (in kg/hectare)	:	Grain yield 6,500 kg/ha

14. Crop	:	Sorghum (*Sorghum bicolor* (L)) Moench
Name of the variety	:	N-14 (Nandyala Mudda Kanki Jonna)
Parentage with details of its pedigree	:	Pure line selection from Proddatur local. Tested under the name NJ-1031
Breeder/Institute responsible for maintaining breeder's stock	:	Regional Agricultural Research Station, Nandyal
Description of variety	:	Tall (200-220 cm) pigmented with white midrib leaves, earheads oval and very compact, grain yellow, medium bold and round.
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	Tall, oval shaped, very compact earheads with slightly bent peduncle
Maturity group	:	Medium in duration 110-115 days
Disease and pest resistance	:	Fairly tolerant to major pests and diseases
Recommended ecology	:	Suitable for Maghi/Rabi conditions of yellow jowar tract in Andhra Pradesh
Yield (in kgs/ha) :		
(a) Commercial product	:	Grain yield : 31 qtls/ha Straw yield : 90 qtls/ha
(b) Seed	:	—

15. Crop	:	Sorghum (*Sorghumbicolor* (L)) Moench
Name of the variety	:	Nandyala Tella Jonna-2
Parentage with details of its pedigree	:	Pure line selection from E-1966, an Ethiopian line. Tested under the name NJ-2122.
Breeder/Institute responsible for maintaining breeder's stock	:	Regional Agricultural Research Station, Nandyal - 518 503, Andhra Pradesh
Description of the variety	:	Tan type plant; medium tall (190-200 cm); early in duration (100 days) large, spindle-shaped, semi-compact earheads with very freely threshable character; bold, pearly-white, good quality grain.
Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	Tan type, large, spindle-shaped earheads; grain bold and slightly flat
Maturity group	:	Early group (100 days)
Disease and pest resistance	:	Moderately tolerant to pests and diseases, drought tolerant type
Recommended ecology	:	Suitable to all Maghi (Late Kharif)/Rabi sorghum areas
Yield (in kgs/ha) :		
(a) Commercial product	:	Grain yield : 36 qtls/ha Straw yield : 65 qtls/ha
(b) Seed	:	—

16.	Crop	:	Sorghum
	Name of the variety	:	DSV-1
	Parentage with details of its pedigree	:	SB-1066 × CS-3541
	Breeder/Institute responsible for maintaining breeder's stock	:	Senior Sorghum Breeder, All-India Co-ordinated Sorghum Improvement Project, University of Agricultural Sciences, Dharwad - 580 005.
	Description of variety :		
	(1) Maturity	:	100-105 days
	(2) Plant height	:	140-160 cm
	(3) Leaf position	:	Semi erect
	(4) Glume colour	:	Straw
	(5) Plant Pigments	:	Tan
	(6) Grain Shape	:	round
	(7) Grain Size	:	medium
	Describe atleast two identifiable and distinguishable morphological characteristics of the variety	:	It is tan type, and grains are straw in colour
	Maturity group	:	Early
	Disease and pest resistance	:	It is resistant to major foliar diseases like, downy mildew, rust, Zonate leaf spot. It is tolerant to grain moulds, shootfly and stem borer.
	Recommended ecology	:	Recommended for all the sorghum growing areas of the State in Kharif season.
	Yield		
	(a) Commercial product	:	8-10 tons/ha (dry fodder) 25-30 Qtls/ha.

17.	Crop	:	Wheat
	Name of the variety	:	Gujarat Wheat 496 (GW 496)
	Parentage with details of its pedigree	:	GW 496 has been developed from the cross HD 2285 × CPAN 1861 through pedigree method of breeding.
	Breeder/Institute responsible for maintaining breeder's stock	:	Research Scientist (Wheat), Wheat Research Station, Gujarat Agricultural University, Vijapur - 382 870.
	Description of variety :		
	(i) Early growth habit	:	Semi erect
	(ii) Tillering capacity	:	Very good
	(iii) Height in cms	:	76-90
	(iv) Colour of stem and foliage	:	Deep green with blooming and pale green hairy auricle.
	(v) Heading days	:	54-63
	(vi) Maturity days	:	96-113
	(vii) *Ear Characters*		
	(a) Shape	:	Oblong
	(b) Density	:	Dense
	(c) Awn colour	:	White
	(d) Glume colour and pubescence	:	White Glabrous
	(viii) *Grain characters*		
	(a) Colour	:	Amber
	(b) Texture	:	Hard
	(c) Size (1000 gr. wt. in gm)	:	43.52
	Disease and pest resistance	:	GW 496 is completely resistant to brown and black rust which are important to Gujarat.
	Describe at least two identifiable and distinguishable morphological characteristics of the variety	:	(i) White glabrous Glumes (ii) Deep green stem with blooming and pale green hairy auricle
	Maturity group	:	Early (Maturity days 96-113)
	Recommended ecology	:	Timely sown good fertility irrigated conditions in Gujarat

Yield (in kgs/ha) :

(a) Commercial product : Mean grain yield-4503 kg/ha. in the trials

(b) Seed : Highest grain yield in the trial - 6704 kg/ha

18. Crop : Wheat

Name of the variety : Gujarat Wheat 503 (GW 503)

Parentage with detail : This variety has been developed from the cross CPAN 1582 × J 142

Breeder/Institute responsible for maintaining breeder's stock : Research Scientist (Wheat), Wheat Research Station, Gujarat Agricultural University, Vijapur - 382 870.

Description of variety :

(i) Early growth habit : Semi erect

(ii) Tillering capacity : Very good

(iii) Height in cms : 80-95

(iv) Colour of stem and foliage : Green with blooming and pale green auricle

(v) Heading days : 56-64

(vi) Maturity days : 95-112

(vii) *Grain character*

(a) Colour : Amber

(b) Texture : Hard

(c) Size (1000 gr.wt. in gms) : 41-47

Describe at least two identifiable and distinguishable morphological characteristics of the variety : (i) White glabrous Glumes
(ii) Spikelet arrangement on spike is dense

Maturity Group : Medium (Maturity)

Disease and pest resistance : GW 503 possesses very good resistance to black and brown rust which appear in Gujarat.

Recommended ecology : GW 503 is recommended for timely sown good fertility irrigated conditions in the State.

Yield (in kgs/hectares) :

(a) Commercial product : Mean grain yield 4570 kg/ha in the trials

(b) Seed : Highest grain yield 6590 kg/ha in the trials

19. Crop : Sorghum

Name of the variety : Gujarat Fodder Sorghum 4 (GFS 4)

Parentage with detail of its pedigree : GFS 4 is a fodder variety developed through hybridization (GJ 37 × Sudan type) and is superior to local in both green and dry fodder yield.

Breeder/Institute responsible for maintaining breeder's stock : Research Scientist (Sorghum), Main Sorghum Research Station, Gujarat Agricultural University, Athwa Farm, Surat - 395 007.

Description of the variety :

Plant height (in cm) : 162 to 223

Days to flowering (50%) : 39 to 49

HCN content at flower : Very low

Stem thickness (cm) : Very thin (0.80 to 1.10)

Leaf colour : Light green

Leaf size : Short and narrow

Leaf numbers : 8 to 14

Earhead compactness : Very loose

Glume colour : Coffee

Seed colour : White with red tinge

Description of the parents of the variety : Parent GJ-37 is stable variety having good potentiality both grain and fodder released for north Gujarat, Saurashtra and Kutch.

This parent is tolerant to major disease and pests. It is medium tall.

Early maturing with thin stem and narrow dark green leaves. While the another parent Sudan type was the earliest in maturity, with thin red stem. This sudan type is resistant to shootfly.

Describe at least two identifiable and distinguished morphological characteristics of the variety : Very thin stem and open earhead

Maturity group early, medium and late, wherever such classification exist : It is early maturing genotype which flowers in 39-49 days

Disease and pest resistance give details of any resistance to pests

(a) Pest : It is tolerant to shootfly and stemborer

(b) Diseases : It is moderately resistant to most of the leaf diseases

Recommended ecology : This variety is recommended for South Gujarat, North Gujarat, Saurashtra and Kutch under rainfed condition.

Fodderyield (q/ha) in first-cut	*Green*	*Dry*
(a) LSVT	361	132
(b) MLT	402	137
(c) On Farmer's field	297	—
(d) Per day production Q/day	8.20	3.0
(e) % increased over local	19.5	25.7

सत्यमेव जयते

INDEX

CEREALS

Page No.

1. Barley (*Hordeum vulgare* Linn) 427
2. Paddy (*Oryzya sativa* L.) 427-429
3. Triticale (*X Triticosecale* W.) 429
4. Wheat (*Triticum* spp) 429-430

MILLETS

1. Barnyard Millet (*Echinochloa colona* (L) Link) 430
2. Common Millet/proso millet/Hog millet (*Panicum miliaceum* L.) 430
3. Finger Millet (*Eleusine coracana* (L) Gaertn) 430
4. Italian millet/Foxtail Millet (*Setaria italica.* Beauv) 430
5. Kodo millet (*Paspalum scrobiculatum* L.) 430
6. Little millet (*panicum sumatrense Roth* Ex) and Minor millet 430-431
7. Maize (*Zea maya* L.) 431
8. Pearl millet (Bulrush Millet, Spiked Millet, Bajara) (***Pennisetum amaericanum*** (L) 431-432
9. Sorghum (*Sorgum bicolor* L.) (Moench) 432

PULSES

1. Blackgram/Urd. (*Phaseolusmungo* Var. *radiatus* Linn.) 433
2. Bengal gram/Gram (*Cicer arietinum* L) 433
3. Cowpea/(Asparagus bean/yard long bean) (*Vignaunguiculata* (L) walpl) *Syn. V. Sinensis* (L) Savi. ex-Hassk, V. Oatjang (Burm f.) walp.V. Cylindrica (L) Skeels. V. Sesquipedalis Fruhw.) 433
4. Green gram (*Vigna radiata* (L) wilczek) 433
5. Horse gram (*Macrotyloma uniflorum* (Lam) (Verdc) 434
6. Moth Bean (Kidney Bean) (*Vigna aconitifolia* (Jacq) Marechal) 434
7. Lentil (*Lens culinaris.* Medic) 434
8. Peas (Field pea and Garden pea) (*Pisum sativum* (L.) Var. arvense (L.) Poir) 434
9. Pigeon pea/(Red gram/Arahar/Tur) (*Cajanus cajan* (L) Millsp) 434
10. Rajmash/(French Bean/Rajma) (*Phaseolus vulgaris* L.) 434
11. Indian Bean (*Lab-lab purpureus* (L) sweet) 434

OILSEEDS

1. Castor (*Ricinus communis* L.) 435
2. Groundnut (*Arachis hypogaea.* L.) 435
3. Indian Rapeseed and Mustard (*Brassica* spp.) (Yellow sarson, Brown sarson, Mustard—Rai) 435
4. Linseed (*Linum usitatissimum* L.) 435
5. Niger (*Guizotia abyssinica.* Cass). 435
6. Safflower (*Carthamus tinctorius.* L.) 435
7. Sesame (Til) (*Sesamum indicum.* L.) 435-436
8. Soyabean (*Glycine max* Meer.) 436
9. Sunflower (*Helianthus annus.* L.) 436
10. Toria (*Brassica* spp) 436

Page No.

FIBRE CROPS

1. Cotton (*Gossypium* spp.) 436-437
2. Jute (*Corchorus* spp.) 437

FORAGE CROPS

1. Berseem (*Trifolium alexandrium* L.) 437
2. Bird wood grass (*Cenchrus setigerus*) Vahl. 437
3. Buffel grass (*Cenchrus ciliaris*) Linn. 437
4. Dhraf grass (Goria, Guria) : Chrysopogen fulvus (spreng) chiov. (Syn. *Pollinia fulva.*) Spreng *Andropogon montanus.* Koen Ex. Trin. *A. monticola* Roem et. Schult.) 437
5. Dinanath grass (*pennisetumtpedicellatum.* Trin.) 437
6. Golden Timothy/Setaria Grass/Pigeon Grass (*Setaria anceps.*) Stapf. E. Massey 437
7. Guar (Cluster bean) (*Cyamopsis tetragonaloba* (L) Taub.) 438
8. Guinea grass (*panicum maximum* Jacq.) 438
9. Lucerne (*Medicago sativa.* L.) 438
10. Napier Grass (*Pennisetumpurpureum* K. Schum.) 438
11. Oats (*Avena sativa* L.) 438
12. Rice Bean/(Red Bean) : *Vignja umbellata* (Thunb) Ohewi and Ohashi : (Syn : *Phaseolus calcaratus* Roxb) 438
13. Sweet clover/Indian clover/Senji (*Melilotus* spp.) 438

VEGETABLES

Tubers

1. Potato (*Solanum tuberosum.* L.) 438
2. Sweet Potato (*Ipomoea batatas*) (L.) Schott 438

Rhizomes

1. Colocasia/Elephant ear (*Colocasia antiguorum* Schott) 438
2. Greater yam 438
3. Ginger (*Zingiber officinale* Rosc). 438
4. Lessar yam (*Dioscorea esculenta* (Lour.) Burkill) 438
5. White yam 438

Cucurbits

1. Bittergourd (*Momordica charantia* L.) 439
2. Bottlegourd (*Lagenaria scicerarid* (Molina) Standl. Syn. *L. Leucantha* Rusby) 439
3. Bush Squash 439
4. Cucumber (*cucumis sativus* L.) 439
5. Indian Squash (Tinda) (*Praecitrullus fistulosus.* Pang) 439
6. Long Melon (*cucumis melo.* L. Var. *utilissimus* Duth & Full) 439
7. Musk melon (*cucumis melo.* L.) 439
8. Pumpkin (*Cucurbita moschata* (Duch) Poir) 439
9. Ridgegourd (*Luffa acutangula* Roxb) 439
10. Snakegourd (*Trichosanthes anguina* L.) 439
11. Watermelon (*citrullus Hlanatus* (Thunb) 439

Page No.

FRUIT VEGETABLES

1. Brinjal (*Solanum melonegna* L.) . . . 439
2. Hotpepper (Chilli) (*Capsicum frutescens.* L.) . . . 439
3. Okra (Bhindi) (*Abelmoschus esculentus* (L) Moench) . . . 439
4. Sweet pepper (*Capsicum annuum* (L.) Vari *grossum* Bailey) . . . 440
5. Tomato (*Lycopersicum esculentum* Mill) . . . 440

LEGUME VEGETABLES

1. Winged bean (*Prophocarpus tetragonolobus*) . . . 440

GREENS/LEAFY VEGETABLES

1. Amaranthus (*Amaranthus tricolor.* L.) . . . 440

COLE CROP

1. Cabbage (*Brassica oleracea* (L) Capitata L.) . . . 440
2. Cauliflower (Heading Broccoli) (*Brassica oleracea* (L) Vari *Botrytis.* L.) . . . 440

BULB VEGETABLES

1. Garlic (*Allium Sativum* L.) . . . 441
2. Onion (*Allium Cepa* L.) . . . 441

ROOT VEGETABLES

1. Beet Root (*Beta vulgaris* L.) . . . 441
2. Carrot (*Daucus Carota.* L.) . . . 441
3. Radish (*Raphanus Sativus.* L.) . . . 441

OTHER CROPS

1. Arecanut (*Areca catechu* L.) . . . 441
2. Black pepper (*Piper nigrum* L.) . . . 441
3. Cashew (*Anacardium Occiaentale* L.) . . . 441
4. Cassava . . . 441
5. Coconut (*Cocos nucifera* L.) . . . 441
6. Cumin (*Cuminum cyminum* L.) . . . 442
7. Fennel . . . 442
8. Scarlet Linum . . . 442
9. Sugarcane . . . 442
10. Tobacco . . . 442
11. Turmeric . . . 442

55—1 Min of Agri/ND/95

सत्यमेव जयते

CEREALS

Crop : **Barley** (*Hordeum Vulgare* Linn.)

	Variety	Page No.
1.	BH-75	3, 18
2.	BHS-52	276
3.	BHS-169	204, 215
4.	DL-120	185
5.	Jagrati	42, 49
6.	Kadar DL 36	5, 29, 183, 189,
7.	Karan-3	61, 82, 157
8.	Karan-4	276
9.	Karan-16	61, 82, 157
10.	Karan-18	61, 82, 157
11.	Karan-19	61, 82, 157
12.	Karan-92	277
13.	Karan-280	61, 82
14.	Lakhan (K-226)	42, 49
15.	P.L. 172	158, 167
16.	RD 2052	361
17.	V.L. Barley 1	62, 75

Crop : **Paddy**

	Variety	Page No.
1.	Ambika	42
2.	ACK-5	110, 127
3.	ASD-16	133, 148
4.	ASD-17	330, 348
5.	Annada	204, 216
6.	ADT-37	251, 278, 301
7.	ADT-38	251, 278, 301
8.	ADT-39	251, 278, 302
9.	Ananga (IET-7433)	277, 288
10.	Aditya	310, 315
11.	Amulya (IET-8989)	328, 340
12.	BG-90-2	6, 36
13.	BR-34	6, 36
14.	Badava Mahsuri (PLA-1100)	7
15.	BK-79	62, 74
16.	Birsa Dhan-101	83, 104
17.	Birsa Dhan-201	84
18.	Birsa Dhan-202	84
19.	Bharathidasan (Py 3)	84
20.	BAM-6	134
21.	Bhagya	158
22.	BIET-1009	185
23.	Bhuban (IET-7804)	277, 287
24.	BPT-5204 (Samba Mahasuri)	227, 278, 306
25.	Culture-1 (CR-237-1) Kalinga III	6, 37
26.	CR 138-928	7
27.	CR 1014	277, 292
28.	Chaitanya (MTU-2067)(IET-9265)	278, 306
29.	CSR-10 (IET-10349/10694)	328, 339
30.	Daya (OR-131-13-13)	5, 26
31.	Dhanya Lakshmi	7
32.	Dharitri	276, 282
33.	FR-438	134
34.	GR-101	63
35.	GR-102	250
36.	Goa	186
37.	Gayatri (IET-8023)	277, 293
38.	Gauri (IET-7428)	133, 146
39.	Govinda	310, 314
40.	Himalaya 741	158
41.	HKR-120	227, 241
42.	Hari	250, 268
43.	Heera (IET-10973)	277, 290
44.	Improved white ponni	134, 251, 278, 305
45.	IET-1722	5, 27
46.	IGP 1-37 (Darna)	7
47.	IR-50	251, 311, 325
48.	IET-7191	205, 221
49.	IET-7613	249
50.	IET-8548	277, 294
51.	IET-10222	277, 294
52.	IET-6666 (Lakshmi)	329
53.	IET-8021	360
54.	IET-8558	360
55.	IET-6997 (CSR-6)	360
56.	Janki	5, 25
57.	Jajati (OR 47-2) (IET-7284)	5, 27
58.	Jawhar Dhan-75	158, 173
59.	Jogen	186, 200
60.	Keshari 6215 (OR-63-252)	5, 26
61.	Kottabayyahunda (AKP-70-73)	6
62.	Karna (IET-7209)	133, 149
63.	Karjat-1	134, 361, 393
64.	Karjat-14-7	135
65.	Karjat-184	135

Variety	Page No.
66. KMDP-1 (Avinash)	158, 173
67. KMDP-2 (Abhilash)	158, 174
68. Kiron (IET-3226)	186
69. Kalyani-II (IET-10973)	277, 290
70. Kshira (IET-7328)	277, 291
71. Kalashree (IET-10223)	277
72. Kasturi (IET-8580)	328, 338
73. Kanak (IET-1009)	330, 348
74. Kundalika	399, 417
75. Krishnaveni (MTU 2077)	399, 418
76. Lalat (IET-9947)	277, 289
77. Manasarovar (IET-6314) (RP 1045-23-2-1)	3, 19
78. MTU-7029	5, 27
79. MTU-6024	5, 27
80. Madhuri	43
81. Manhar	83, 103
82. Mahaveera (IET-7791)	133, 149
83. MO 7 (Karthika)	158
84. Mahendra (RGL-1750)	186, 206
85. Mandira	186
86. Mandaya Vijaya	206, 228, 251, 273
87. MDU-2	251, 278, 304
88. Moti (IET-9170)	277, 293
89. MDU-3 (IET-6012)	330, 349
90. Neela (CR 404-56-1)	110, 128
91. Narendra-2 (IET-4555)	158, 176
92. Narendra-80	158, 176
Narendra Dhan-118	227, 241
93. Nalini (IET-8987)	328, 341
94. Onam	158
95. Pratap (OR-131-3-1)	5, 26
96. Parijat (IET-2684) (OR-34-16)	5, 26
97. Pavizham (MO-6)	7
98. Pusa-33	7
99. Panvel-1	7
100. Prabavati (PNB-1)	7
101. Ponni (Mahsuri)	43
102. Puduvai Ponni (PY-1)	83, 103
103. Punithavathy (PY-2)	83, 103
104. Pant Dhan-4	84
105. Pusa-169	109, 119
106. Pathara (IET-6639)	133, 146
107. Parasanna (IET-7564)	133, 148

Variety	Page No.
108. Pusa-205 (IET-2279)	156, 163
109. P.R. 108	158, 173
110. Pothana	158, 175
111. Pratibha	158, 174
112. P.R.-109	158, 205, 221
113. Pant Dhan-6	186, 199
114. Puskala (RGL-2624)	186, 206
115. PMK-1	251, 278
116. Panchali	251
117. Padmini (IET-10561)	277, 292
118. Pinakini (NLR 9672-96)	278, 306
119. Pusa Basmati-1(IET-10364)	328, 338
120. Pramava (IET-7999)	328, 339
121. Palghar-1	361, 393
122. Panvel-2	361, 394
123. Pawana	399, 417
124. Radha	6, 36
125. Rudra (OR-165-97-15)	6
126. Ratnagiri-68-1	133, 146
127. Ratnagiri-73	133, 146
128. Ratnagiri-1	134, 361, 392
129. Ratnagiri-2	134, 361, 392
Ratnagiri-711	134
130. Rambha (IET-7975)	134
131. Ratnagiri-24	135
132. Rasmi	158
133. Rajshree (TCA80-4) (IET-7970)	330, 347
134. Sathy 34-36	5, 25
135. Suphala (OR-45-21-63)	5, 26
136. Sugandha	5, 28
137. Sarthi	6
138. Shankar (OR-16-586-12)	6
139. Sona Mahsuri (BPT-3291)	7
140. SLR-51214	7
141. SKL-6 (Sakoli-6)	7
142. SYE-75 (Sindewahi-75)	7
143. Sowbhagya (MTU-4569)	7
144. Sarasa (CR 407-19)	110
145. Seshu (IET-2881)	133, 147
146. Srinivas (IET-2508)	133, 147
147. Sonasali (IET-7575)	133, 148
148. SR-26B	134
149. Swarnaprabha	158
150. Sabita	186, 200

Variety	Page No.
151. SYEER (148-95)	186
152. Satya	228, 251, 271
153. Saleem	228, 251, 272
154. Salivahana (IET-7590) (RP-1057-391)	248, 260
155. Suraksha (IET-7946)	248, 261
156. Srabani (IET-9946)	277, 288
157. Samalei (IET-3350)	277, 290
158. Sudha (TCA 72) (IET-8977)	330, 348
159. Shaktiman (IET-7316)	359, 376
160. Sakoli-7 (IET-10651)	361, 389
161. Syeer-1 (IET-9296)	361, 389
162. TPS-1	63, 251, 278
163. TPS-2	251, 278, 303
164. T-90	134
165. T-141	134
166. T-1242	134
167. Tulsi (IET-7614)	248, 261
168. Tara (IET-9215)	277, 291
169. Tikkana (NLR-27999)	278, 307
170. Terna	399, 417
171. Utkal prava (CR-1030)	5, 26
172. Usar-1	42, 53
173. Udaya (CR-190-103)	110, 127
174. Vijay Mahsuri (MTU-4407)	6
175. V.L. Dhan-16	62, 75
176. V.L. Dhan-206	62, 75
177. Vikramarya (IET-7302)	133, 147, 162
178. Vajram	158, 174
Vythila	158
179. V.D.N.-3-51-18 (Indryani)	186
180. Vamshi (RGL-1746)	186, 206
181. V.L. Dhan-163	227, 242
182. Vanaprabha (IET-9804)	277, 291

Crop : **Triticale** (*X Triticosecale*) (Witlmack)

Variety	Page No.
1. TL-1210	158, 187, 205, 223

Crop : **Wheat** (*Triticum* Spp)

Variety	Page No.
1. B.W. 11	186, 201
2. CPAN-1796	80, 86
3. CPAN-1922 (Himgiri)	185
4. DL-20-9	63
5. G.W.-2	5, 24
6. G.W.-120	61, 83, 99
7. G.W.-405	61, 83, 100
8. G.W.-496	399, 419
9. G.W.-503	399, 420
10. HD-2270	226, 238
11. HD-2278	80, 89
12. HD-2285	80, 89
13. HD-2307	80, 88
14. HD-2327	80, 87
15. HD-2329	60, 66
16. HD-2380	310, 316, 317
17. HD-2385	311
18. HD-2402	226, 238
19. HD-2428	310, 317
20. HD-2501	397, 409
21. HDR-77	358, 368
22. HI-977	226,237
23. HI-1123	227
24. H.P.-1493	361, 385
25. HS-207	276, 285
26. HS-240	276, 285
27. HUW-206	41, 48
28. HUW-213 (Malviya Wheat-213)	41, 80, 86
29. HUW-234 (Malviya Wheat-234)	109, 120
30. HW-741	80, 87
31. K-72	43
32. K-78	43
33. K-7406	43
34. Kailash (PBN 142)	399
35. KDW-16 (Keerti)	5, 24
36. KDW-137 (Kiran)	5, 25
37. KRL 1-4	358, 367
38. Kundan (DL-153-2)	80, 86
39. MACS-1967	156, 166
40. Maghar (K-8027)	205, 310, 318
41. Mangla	328, 342
42. PBW-34	60, 65
43. PBW-54	84
44. PBW-65	158, 168, 248, 262
45. PBW-120	158, 168
46. PBW-138	158, 167
47. PBW-154	250, 269, 276, 284
48. PBW-175	276, 284
49. PBW-226	276, 284,
50. Pragati (DWR-39)	60, 66

Variety	Page No.
51. Raj-1972	61
52. Raj-2184	60, 65
53. Raj-2535	330
54. Raj-3077	328, 343
55. Sagarika (OW-6)	6
56. Tawa-267	62, 73
57. Triveni (K-8020)	132, 166
58. Utkalika (OW-8013)	6
59. UP-1109	186, 201, 310, 318
60. UP-2113	84
61. UP-2121	84
62. VL Gahun-616	132, 139
63. WH-283	3, 18
64. WH-291	4, 41, 48
65. WH-416	358, 367
66. WL-2265	60, 67

MILLETS

Crop **Barnyard Millet** (*Echinochola Colona* (L) Link)

Variety	Page No.
1. Anurag	42
2. Chandan	277, 286
3. Gujarat Banti-1	110, 127
4. RAU-2	41
5. RAU-3	41, 48
6. V.L. Madira (V.L. 29)	247, 253, 361, 391

Crop : **Common Millet** (Proso millet, Hog millet) *Panicum millaceum* L.

1. Co 3	133, 149
2. Panivaragu - Co 4	311, 322
3. Panivaragu Nagarjuna (L-1387)	311, 323
4. Sagar (L-5224)	311, 323

Crop : **Finger Millet** (*Elusine coracana* (L) Gaertn)

Variety	Page No.
1. Birsa Marua	84
2. Co 12	63
3. Co 13	311, 322
4. Gujarat Nagili-1	5, 30
5. Gujarat Nagili-2	250, 266
6. Indef-5	43
7. Indef-8	134
8. Indef-9	158, 205, 222
9. KBR-1 (HR-911)	133, 150
10. KM-13	277, 286
11. Nilachal (B4-10-56)	5, 30
12. Ouat-2 (Vakti)	330
13. Paiyur-1	42, 58
14. Pant Mandua-3 (PES)	186
15. PES-110	60, 67
16. PES-176	62, 84
17. Ratnagiri (PR-1044)	41, 47
18. RAU	249
19. RAU-8	310, 315
20. Simhadri	5, 30
21. TRY-1	311, 321
22. V.L. Mandua-124	361, 390

Crop : **Italian Millet** (Foxtail millet) (*Setaria italica* Beauv.)

1. Chitra	7
2. Lapakshi (AK-132-1)	399, 415
3. Nallamala Korra (Nandyal Korra-2 Sia-326)	3, 21
4. Nischal	277, 287
5. Tinai-K-3	311, 320

Crop : **Kodo Millet** (*Paspalum scrobiculatum* L.)

1. Gujarat Kodara	5, 30
2. Jawahar Kodo-41	109, 117
3. Jawahar Kodo-62	109, 118
4. PSC-1	109, 118

Crop : **Little Millet** (*Panicum sumatrense*, Roth Ex) Roem & Schult (Syn. *P. miliare* Lam)

1. Gujarat Vari	5, 31
2. Jawahar Kutki-2	158, 172

Variety	Page No.
3. Jawhar Kutki-8	184, 194
4. Pani Varagu Co2	42, 56
5. Paiyur-1	311, 321
6. PRC-3	109, 118

Crop : **Maize** (*Zea mays.* L.)

Variety	Page No.
1. Arun (A. 68)	204, 215
2. Composite R-21	330
3. Co_1	63
4. Composite A-82 (Krishna)	249
5. Composite Hemant	110, 127
6. Composite Suwan	5, 29
7. CM-112	298
8. CM-113	298
9. CM-114	297
10. CM-115	297
11. CM-116	297, 298
12. CM-117	297, 298
13. CM-118	297
14. CM-119	297
15. CM-120	297
16. CM-104	296, 297
17. CM-105	296, 297
18. CM-201	296, 297
19. CM-206	297
20. CM-207	297, 298
21. CM-208	297
22. CM-205	298
23. CM-300	296
24. CM-301	298
25. CM-302	298
26. CM-303	298
27. CM-400	296
28. CM-401	298
29. CM-600	296
30. CM-601	296
31. CM-200 × CM-111	299
32. CM-400 × CM-300	299
33. CoH-2	331
34. D-765	3, 21
35. D-823 (Pragati)	249
36. Diara-3	3, 21
37. Deccan Hybrid Makka-1	227, 247, 254
38. Dhawal (VC 80 × EtoxTux Pb 2)	248, 255
39. DHM-105 (EH-40184)	358, 369
40. Farm Sameri	42, 53
41. Ganga-11 (EH-5131)	248, 255
42. Gujarat Makka-1	250, 267
43. Hans (PK Hunius)	157, 205, 226
44. Harsa Composite	226, 235
45. J 54 ZFS 4 (Pratap Kharif C, 4)	227
46. J 2030 (Kesari)	227
47. J 3022 (Padam)	227
48. Kiran (J-660)	157, 205, 226, 234
49. Kundan Hybrid (EH-2123)	226
50. Mansar (Super Composite)	157, 205, 226, 234
51. MCU-508	156, 162
52. MCU-314 (Sharad)	227
53. M-13 (Hemant)	249
54. Marphological characters of Inbred lines	300
55. Maduri (Sweet Corn)	358, 371
56. NLD-white	110, 126
57. Navjot (J 684)	157, 205, 226, 234
58. Partap-1	83, 101
59. Parbhat (J 115)	226, 239
60. Pusa Composite-1 (EFC)	248, 256
61. Pusa Composite-2 (EVA 61-80)	248, 256
62. Parvati (Composite)	361, 384
63. Prabha	399, 416
64. Renuka (G 25 composite)	134, 226, 236
65. Saitaj	226, 235
66. Surya (D 765 × D 787) 15	248, 256
67. Varun (Synthetic B-41)	358, 370
68. V.L. Makka 41	205, 220, 236
69. V.L. Makka 42	227, 248, 257
70. V.L. Makka 88	226, 236

Crop : **Pearl Millet** (Bulrush Millet, Spiked Millet) (*Pennisetum americanum* (L) Leek)

Variety	Page No.
1. Bajra × Napier Hybrid (Yashwant RBN-9)	330, 352
2. Co 7	133, 142
3. Gaint Bajra	6, 37
4. GHB-30	135, 158, 181
5. GHB-32	84
6. GHB-181	399

Variety	Page No.
7. HC-4 (MP-19)	2, 15
8. H.H.B.-45	4, 42, 50
9. H.H.B.-50 (MH-208)	157, 158, 167, 204, 214
10. H.H.B.-60	250, 269
11. H.H.B. 67	360, 380, 397, 407
12. ICMS-7703	80, 89
13. ICMH-423	203, 208
14. ICMV 84400 (MP-155) (ICMV-155)	359
15. MBH-4	329
16. MBH-118	2, 15
17. MBH-130	156, 161
18. MH-179 (ICMH-451)	108, 120
19. MH-180 (ICMH-501)	108, 121
20. MH-182	108, 122
21. MH-123 (MBH-136)	249, 275
22. MH-229	360
23. MBH-136	275, 280
24. MP-124 (ICTP-8203)	247, 253
25. Mukta (RBS-2)	228
26. PCB-15	108, 116
27. PHB-47	83, 100
28. PNB-83	158, 250
29. Pusa-23	184, 197
30. Pusa Safed	275, 280
31. RCB-IC-9	398
32. RCB-2	83, 101
33. Raj Bajra Chari-2	360, 381
34. Sangam (RHR-1)	110, 124
35. V.B.H. 4	397, 408
36. X 5 (UCH-9)	7

Crop : **Sorghum** (*Sorghum bicolor.*)

Variety	Page No.
1. AKSH-14-150 (SPH-468)	360,382
2. AKSH-73 (SPH-388)	360, 383
3. AKSV-37 (SPV-669)	360, 384
4. Co 21	62, 77
5. Co 22	62, 77
6. Co 25	63
7. Co 27	134
8. CSH-10	132, 138
9. CSH-11	132, 138
10. CSH-12-R	132, 137
11. CSH-13 R	398
12. CSV-10 (SPV-340)	3, 16
13. CSV-11 (SPV-351)	3, 17
14. CSV-13	226, 237
15. DSH-1	135
16. DSV-1	399, 419
17. GFS-4	399, 420
18. Gujarat Jowar 9	83, 101
19. Gujarat Sorghum-35	5, 28
20. Gujarat Jowar-36	110, 128
21. Gujarat Sorghum Hybrid-1	5, 28
22. Gujarat Jowar-37	158, 178
23. Haryana Chari-171	184, 193
24. Haryana Chari-260	184, 193
25. K-8	330, 351
26. Kovilpatti-4	110, 128
27. KDRSH-1	135
28. MFSH-3	358, 365
29. N_{14} (Nandyala Muddakanki Jonna)	399, 418
30. Nandyala Tella Jonna-1	399
31. Nandyala Tella Jonna-2	399, 418
32. Pusa Chari-9 (PC-9)	3, 17
33. Pusa Chari-23 (PC-23)	3, 18
34. Rajasthan Chari-1 (SV-52)	3, 17
35. Rajasthan Chari-2 (SU-45)	80
36. S-171	82
37. SAR-1	226, 237
38. SB-905	62, 73
39. SB-1066	5, 29
40. SPV-96	62, 74
41. SPV-245	62, 73
42. SPV-297	42, 52
43. SPV-462	133, 151
44. SPV-504 (RSV-9 R) Swati	42, 52
45. SPH-201	133, 150
46. SPU-462 (C.SV-12)	157
47. SU-45	41,90
48. U.P. Chari-2	3, 18
49. Varsha	42, 52

PULSES

Crop : **Blackgram** (*Vigna mungo* (L) Hepper)

Variety	Page No.
1. ADT-4	311
2. ADT-5	311
3. Jawahar urid-2	158, 179
4. Jawahar urid-3	158, 180
5. Pant U. 35	158, 180
6. Pragati	83
7. Sarala (B 12-4)	6, 34
8. TAU-1540	7
9. Vamban 1	311, 351

Crop : **Bengalgram** (*Cicer arietinum*. L.)

Variety	Page No.
1. Anuradha	186
2. Avarodhi	7, 158, 181
3. Bheema (2375)	133
4. Co$_3$	133
5. Gaurav (H-75-35)	2, 10
6. Gora Hissari	185, 227, 245
7. GNG-146	2, 11
8. GNG-149	227
9. Haryana Chana-1 (H-82-2)	361, 385
10. ICCC-4	6, 34
11. ICCC-32	330
12. PBG-1 (GL-83119)	250, 266, 359, 375
13. Phule G-12	361, 391
14. Pusa-240	2, 11
15. Pusa 244	61, 71
16. Pusa 256	61, 72
17. Pusa 261	62
18. Pusa 267 (BG-267)	204, 211
19. Pusa 408	81, 92
20. Pusa 413	81, 93
21. Pusa 417 (Girnar)	81, 93
22. RAU 52	84
23. Vishwas (Phule G-5)	110, 123

Crop : **Cowpea** (Asparagusbean, Yard long bean) (*Vigna unguiculata* (L) Walp) Syn. *V. Sinensis* (L) Savi ex Hassk V. Catjang (Burm. f) Walp., *V. Cylindrica* (L) Skeels, *V. Sesquepedalis* Fruhiv.)

Variety	Page No.
1. Amba (V-16)	2, 9
2. Birsa Sweta	110, 125
3. Bundel Lobia-1	398
4. Charodi	227, 241
5. Co$_5$	134
6. Gujarat Cowpea-2	6, 34
7. Gujarat Cowpea-3 (GC 82-7)	358, 365
8. KBC-1	205, 218
9. Krishnamani (PTB-2)	7
10. Paiyur-1	43
11. Pusa 152	43
12. Pusa Komal (L-1552)	156, 162
13. RC-19	158, 169
14. S-288	42, 50
15. Shreshtha (V-37)	5
16. Shweta (No. 9998)	330, 347
17. Swarna (V-38)	5
18. TVX-944-026	205, 218
19. UPC 287	226, 233, 328, 334
20. UPC 4200	329
21. UPC 5287	109, 116

Crop : **Greengram** (*Vigna radiata* (L.) wilcrjek)

Variety	Page No.
1. ADT-3	311
2. Co$_2$	62, 77
3. Co$_3$	62, 77
4. Dahuli (TT 9 E)	6, 33
5. Jawahar moong-131	134
6. Jyoti (Hybrid-4-3)	6, 33
7. K-851	2, 10
8. ML-267	158, 172
9. Paiyur-1	63
10. Pant Moong-2	2, 10
11. Pant Moong-3	82, 98
12. PDM 11	184, 194, 226
13. PDM 54	184, 195, 226, 358, 365
14. Phule M-2	361
15. Pusa 105	184, 194
16. Ratila selection	7
17. Rajandra Sona	205
18. S-9	2, 9
19. Sujata (Hy-12-4)	6, 33
20. T-G-3	5
21. Vamban-1	330

Crop : **Horsegram** (*Macrotyloma uniflorum*. Lam Verdc)

Variety	Page No.
1. Birsa Kulthi	110
2. Dapoli-1	133, 144
3. Deepali (HPK-6)	186, 227, 245
4. MAN	134, 325
5. Maru Kulti-1 (p.L.Selection)	328, 335
6. Paiyur-1	311, 321
7. V.L. Ghat-1	84

Crop : **Mothbean** (Kidneybean) (*Vigna aconitifolia*) (Jacq Marechal)

1. Jawala (PCMO-926)(UUM 1007)	2, 11
2. Maru Moth 1 (JMM 259)	4, 248, 258
3. MBS-27	361
4. Moth-880	328, 336

Crop : **Lentil** (*Lens culinaris* Medic)

1. Arun	84
2. LL-147	250, 267
3. Malika	109, 119

Crop : **Peas** (Field Pea, Garden Pea) (*Piscum Sativum*. L. Var. *arvanse* (L) poir)

1. Aparna	205, 222
2. Azad P-1	6, 35
3. Glorasia	135
4. JP-179	158, 172
5. Madhu-1	7
6. Malaviya Matar-2	248, 262
7. Pant-5	156, 162
8. Pant Uphar (I.P.3)	41
9. P.M.-2	276, 328, 338
10. Punjab-88	83, 157
11. RPG-3 (Grain type)	158, 172
12. V.L. Matar-3	328, 337

Crop : **Pigeonpea (Redgram)** (*Cajanus Cajan* (L) Millsp.)

Variety	Page No.
1. Bahar	108, 115
2. Co$_2$	62, 78
3. Co$_3$	62, 78
4. Co$_5$	43
5. ICPL-87 (Pragati)	108, 122
6. Jagriti (ICPL 151)	185, 309, 313
7. Manak (H-77-216)	81, 97
8. Maruti (ICP-8863)	133, 140
9. Pant A-3	157
10. Pusa-33	203, 208
11. Pusa-84	81, 94
12. Pusa-85	227
13. SA 1	42, 56
14. Sagar (H-77-208)	132
15. Shard	204
16. T-7	206, 227, 240
17. TAT-5	4, 204
18. TAT-10 (Trombay Akola Tur)	7
19. T.T. B-7	205, 218
20. Tur T-15-15	6, 34
21. T. Vishakha-1	2, 12
22. Upas-120	42, 49

Crop : **Rajmash (French Bean)** (*Phaseolus Vulgaris*. L.)

1. Arka Komal (Sel-9)	134, 359, 374
2. Birsa Priya	110, 126
3. HUR-15 (Malviya Rajmash-15)	249, 328, 341
4. Pant Anupama	6, 35
5. V.L. Bauni Bean-1	81, 95
6. Uday (PDF-14)	184, 195

Crop : **Indianbean/Wal.** (*Lab Lab purpureus* (L) Sweet)

1. Co$_8$	62, 78
2. Co$_{11}$	330, 350
3. Dasarawal	110, 331, 355
4. Deepaliwal	110, 331, 355
5. Mochai Lab-Lah Co2	42, 57
6. Rajni	83, 104
7. TKD-1	331
8. Wal Konkan-1	6, 38
9. Watex	133

OILSEEDS

Crop : **Castor** (*Ricinus communis* L.)

Variety	Page No.
1. GCH-2 (Gujarat Castor Hybrid-2)	110, 124
2. GCH-4	203, 206, 210
3. TMV-5	43
4. VI-9	7

Crop : **Groundnut** (*Arachis hypogaea*. L.)

1. ALR-1	330, 345
2. Birsa Groundnut-G	84
3. Birsa Groundnut-3 (BG-3)	361, 387
4. Co$_2$	43
5. Chitra (MA-10)	42, 51, 80, 90
6. Dh. 8	134, 186
7. G. G. 11	110, 205, 219
8. Girnar-1 (CGC 4018)	226, 239
9. Gujarat Groundnut-2 (J-1/27-5-1)	6, 32
10. ICGS 11	132, 135, 137
11. ICGS-37 (ICGV-87187)	397, 404
12. ICGS-76	328, 334
13. ICGV-87119 (ICGS-1)	329, 359, 377
14. ICGV-87121 (ICGS-5)	329
15. ICGV-87128 (ICGS-44)	226, 233
16. ICGV-87157 (ICG-FDRS-4)	329
17. ICGV-87160 (ICG-FDRS-10)	329, 359, 378
18. Jawan (OG-71-3)	7, 82
19. Kadiri-3	81, 96
20. Kissan (OG-1-13-3)	83, 102
21. Kaushal (G-201)	3, 20
22. L.G.-19	157
23. M-335	205, 219, 330, 249
24. MA-16 (V.B.)	249
25. MH-4	361, 388
26. SG-84	158, 170
27. TG-3	158, 170
28. T.G-14	158
29. T.M.V.-7	43
30. U.F. 70-103	42, 51
31. VRI- 1	134, 205, 219
32. VRI- 2	330, 346

Crop : **Indian Rape Seed and Mustard** (*Brassica* spp) (Rape=Yellow Sarson, Brown Sarson and Toria) (Mustard=Rai)

Variety	Page No.
1. Bhagirathi (RW-351)	186, 200
2. Gobhi Sarson-GSL 1	158, 170
3. Gujarat Mustard-1	399, 415
4. Narendra Rai (NDR-8501)	397, 406
5. Pusa Bold (DIR-50)	2, 16
6. PYS-6	62
7. RH-30	2, 13
8. RL-1359	250, 268, 358, 372
9. RLM-619	83, 102
10. RLM-514	132
11. Sarama (RW-85-59)	186
12. Rohini (KRV-24)	134
13. Saurabh	156, 164
14. Vaibhav (RK-1418)	81, 91
15. Vardan (RK-1467)	81, 92

Crop : **Linseed** (*Linum usitatissimum* L.)

1. Garima (LHCK-39)	40, 45
2. Gaurav (LCK-152)	184, 194
3. Himalini	2, 12
4. Janaki (KL-43)	361
5. Jawahar Linseed-23 (SPS-23-10)	40, 45
6. Jeevan (DPL-21)	204, 212
7. Kiran (RLC-6)	204, 212
8. Laxmi-27	158, 172
9. Pusa-2 (LS-2)	2, 12
10. Pusa-3 (LS-3)	2, 13
11. Shubhra (LHCK-21)	40, 46
12. Sweta (LHCK-131)	40, 46

Crop : **Niger** (*Guizotia abyssinica* Cass.)

1. IGP-76	6, 38
2. RCR-317	250, 268

Crop : **Safflower** (*Carthamus tinctorius* L.)

1. APRR-3 (Sagar mutyalu)	157, 185, 227, 244
2. Jawhar Safflower-1	158, 178
3. Malviya Kusum-305	186, 227, 246
4. Nira	186, 200

Crop : **Sesame** (Til) (*Sesamum indicum*. L.)

1. ACV-1 (Soma)	158
2. ACV-2 (Surya)	158
3. Kalika (BM-3-7)	6, 32
4. KDSC-1 (E-8)	134, 186, 330, 350

Variety	Page No.
5. Krishna	361,386
6. N 62-39 (JGI-1) (Rajeswari or Swetha)	227
7. Rajeswari	311, 324
8. RT-46	397,407
9. Tapi (JLT-7)	186, 227, 242
10. TC-289	205, 222
11. TMV-3	158, 171
12. TMV-4	6, 32
13. Vinayak (Scl-14)	277, 294

Crop : **Soyabean** (*Glycine max* Merr.)

Variety	Page No.
1. Gujarat Soyabean 1 (GS-1)	111
2. Gujarat Soyabean-2	111
3. Gyalab	187
4. JS-75-46	158, 178
5. Jawahar Soyabean 76-205	158, 331, 361, 388
6. MACS-13	2, 14
7. MACS-58	310, 316
8. Monetta (E 2587)	60, 68
9. P.K.-308	2, 14
10. P.K.-416	84, 110, 128
11. PK-471	311
12. PK-472	109, 119
13. PK-564	311
14. Pusa-16 (DS-73-16)	184, 195
15. Pusa-20 (DS 74-2-2)	204, 216
16. Pusa 22	398
17. Pusa 24	184, 196
18. Shiwalik (HIMSO-333)	361, 388
19. S.I.,-96	158, 179
20. V.L. Soya-1	7, 62, 76
21. V.L. Soya-2	328, 341

Crop : **Sunflower** (*Helianthus annus* L.)

Variety	Page No.
1. APSH-11	227, 243
2. Co_2	134
3. MSFH-1	156, 164
4. MSFH-8	184, 196
5. MSFH-10	248, 260
6. MSFH-17	276, 283
7. SS-56	361

Crop : **Toria** (*Brassica* spp.)

Variety	Page No.
1. Bhawani (TK-8401)	84
2. Ludhiyana Composite 1	84
3. Panchali (TWC-3)	187, 271
4. PT-30	158, 179
5. PT-303	41, 81, 91
6. PT-507 (PT 507-B)	358, 367
7. RAUTS-17	361, 386
8. T.L.-15	276, 283

FIBRE CROPS

Crop : Agave (Sisal)

Variety	Page No.
1. Lila	61, 70

Crop : **Cotton** (*Gossypium* spp.)

Variety	Page No.
1. Abadhita-1	398, 410
2. AKH-081	186, 227, 245
3. AKA-8401	361
4. Arunabha (JK-119)	398, 410
5. BC-761	60, 69
6. DB 3-12 (Ajanta)	6, 32
7. DDH-2	399
8. DS-1	82, 97
9. DS-5	227, 240
10. F-286	62, 76
11. F-505	158, 169
12. G-Cot DH.-7	110, 125
13. G. Cot DH-9 (GDA-149)	399, 411

Variety	Page No.
14. G. Cot-14	158, 168
15. G. Cot Hybrid-8	250, 265
16. G. Cot-15	399, 412
17. Godawari (NHH-1)	42, 51
18. HS-45	250, 269
19. HB-224	328, 343
20. Jawhar Kapas-3	250, 268
21. Kanchana	204, 215
22. Karunganni-9	6, 38
23. Karunganni-10 (K-10)	63
24. Krishna (AC-122)	110
25. Laxmi	43
26. Lohit	5, 31
27. LH-886	311, 320
28. LH-900	158, 169
29. LH-1134	399
30. Lam Hybrid	311, 319
31. Ludhiana Desi-327	250
32. MCU-11	330, 345
33. MECH-4	397, 403
34. NA-247 (G. Hirsutum)	6, 31
35. Nagnath PH-93	361

Variety	Page No.
36. NH-80	7
37. NH-239 (Purnima)	7
38. NHB-12	399, 413
39. NHH-44	6, 37
40. Pavan (ADB-332)	110
41. Priya (NA-920)	399, 414
42. Pusa-31	309, 314
43. Pusa Yamdagni	204
44. RG 8	227, 240
45. Rohini (NA-48)	6, 37
46. Savita (H-712)	184, 191
47. Supria (CP-1998-F)	3, 19
48. Sampada	186
49. Vikas (CA-10-2)	206, 249
50. Vikas	277, 286

Crop : **Jute** (*Corchorus* spp.)

1. CUC-1	186
2. JRO-3690	60, 69

Crop : **Ramie**

1. R-57-34	61, 70

FORAGE CROPS

Crop : **Berseem** (*Trifolium alexandrinum* L.)

Variety	Page No.
1. B.L. 2	309, 313
2. B.L. 10	83, 102
3. B.L. 22	61, 203, 209
4. White Clover (Palampur composite)	158, 180

Crop : **Birdwood Grass** (*Cenchrus setigerus*) Vahl.

1. Marwar Dhaman (CAZRI-76)	81, 94

Crop : **Buffel Grass** (*Cenchrus ciliaris*) Linn.

1. Bundel Anjan-1	327, 333
2. Co_1	331
3. Marwar Anjan (CAZRI-75)	81, 94

Crop : **Dharaf Grass** (Goria, Gunia)
Chrysopogon fulvus (Spreng) Chiov. (Syn. *pollinia fulva* Spreng., *Andropogon montanus* Koen Ex. Trin. *A. monticola Roem.* et. Schult)

Variety	Page No.
1. GAU-D-1	62, 75

Crop : **Dinanath Grass** (*Pennisetum pedicellatum* Trin.)

1. Bundel Dinanath-1	184, 193
2. Bundel Dinanath-2	328, 334
3. Bundel Dinanath-3	398
4. Bundel Dinanath-4	398
5. IGFRI 4-2-1	185

Crop : **Golden Timothy** (*Setaria Grass*) (*Pigeon Grass*) : *Setaria : anceps* Stapt. Ex. Massy

1. PSS-1	360, 382

Crop : **Guar (Cluster Bean)** (*Cyamopsis tetragonaloba* (L. Taub.)

Variety	Page No.
1. Durgabahar (RGC-955)	63
2. Guara-80	310, 397, 405
3. HFG-156	204, 215
4. HFG-258	204, 211
5. Maru Guar (2470/12)	4
6. Pusa Navbahar	110, 129
7. RGC-197	358, 366

Crop : **Guinea grass** (*Panicum maximum* Jacq.)

Variety	Page No.
1. PGG-9	156, 162
2. PGG-14	275, 282
3. PGG-19	250, 266

Crop : **Lucerne** (*Medicago sativa.* L.)

Variety	Page No.
1. L.L. Composite-3	60, 67

Crop : **Napier grass** (*Pennisetum purpureum* K. Schum.)

Variety	Page No.
1. BH-18	206

Crop : **Oats** (*Avena sativa.* L.)

Variety	Page No.
1. JHO-822 (Bundel Jai)	227, 328, 336
2. OL-9	185
3. UPO-212	310, 359, 376

Crop : **Ricebean (Redgram)** (*Vigna umbellata* (Thumb) Ohwi & Ohashi ; (Syn., *Phaseolus calcaratus* Roxb.)

Variety	Page No.
1. RBL-1	158, 177

Crop : **Sweet Clover** (Senji) *Melitotus* spp.

Variety	Page No.
1. YSL-106	83, 102

VEGETABLES

TUBERS

Crop : **Potato** (*Solanum tuberosum.* L.)

Variety	Page No.
1. Kufri Swarna	156, 163

Crop : **Sweetpotato** (*Ipomoea batatas* (L.) Schott)

Variety	Page No.
1. Jawhar Shakarkand-145	158
2. Rajendra Shakarkand-5	81, 96
3. Samrat (S-30)	184, 196
4. Sree Nandhini (76-Op-217)	185
5. Sree Vardhini	184, 197

RHIZOMES

Crop : **Colocasia**

Variety	Page No.
1. C-266	185
2. Satamuki	109, 117
3. Sree Rashmi	184, 192

Crop : **Grater Yam**

Variety	Page No.
1. Da-80	185
2. Sreekeerti (DA-60)	184, 193

Crop : **Ginger**

Variety	Page No.
1. Suprabha	249, 264

Crop : **Lesser Yam** (*Dioscorea esculenta* (Lour) Burkill)

Variety	Page No.
1. Sree Latha (De-11)	62, 76, 82, 109, 119

Crop : **White Yam**

Variety	Page No.
1. Sree Priya (U.195 (2))	185, 204, 213
2. Sree Subhra (I-146)	185, 204, 214

CUCURBITS

Crop : **Bittergourd** (*Momordica charantia.* L.)

Variety	Page No.
1. Arka Harit	133, 141
2. MDU-1	42, 57
3. Punjab-14	158, 168
4. VKI-Priya	7

Crop : **Bottlegourd** (*Lagenaria sinceraria*) (Molina standl.) (Syn. *L. Leucantha* Rusby)

1. Arka Bahar	133, 142

Crop : **Bush Squash**

1. Patty pan	133, 142

Crop : **Cucumber** (*Cucumis Sativus* L.)

1. Sheetal	133, 331, 354

Crop : **Indian Squash** (Tinda) (*Praecitrullus fistulosus.* Pang)

1. Arka Tinda	133, 150

Crop : **Longmelon** (*Cucumis melo* L. Var *utilissimus* Duth & Full)

1. Arka Sheetal	133, 145

Crop : **Muskmelon** (*Cucumis melo.* L.)

1. Arka Jeet	133, 145
2. Arka Rajhans	133, 145
3. Punjab Hybrid	83, 157, 186, 199

Crop : **Pumpkin** (*Cucurbita moschata* Duch. Poir)

1. Ambili (CM-14)	248, 259
2. Arka Chandan (HHR 105-1-1)	134, 359, 373
3. Arka Suryamuki	134, 360
4. Pusa viswas (Sel 107)	358, 376

Crop : **Ridgegourd** (*Luffa acutangula* Roxb)

1. Co_3	42, 57

Crop : **Snakegourd** (*Trichosanthes anguina.* L.)

1. Co_2	133, 151

Crop : **Watermelon** (*citrullus lanatus* (Thumb))

1. Arka Jyoti (Hybrid)	133, 152
2. Arka Manik	134, 373

Crop : **Brinjal** (*Solanum melonegna* L.)

Variety	Page No.
1. ABV-1	186
2. Annamali Brinjal	83, 104
3. Arka Kusumakar	133, 140
4. Arka Navneet	133, 141
5. Arka Sheel	133, 141
6. Arka Shirish	133, 140
7. ARU-1	83
8. ARU-2C	360
9. Aruna	110, 331, 354
10. Azad B_1 Round	6, 35
11. Azad Kranti	6, 35, 205
12. Co_1	42, 54
13. Co_2	331
14. Jammunigola	158, 167
15. Kt-4	329
16. Pant Rituraj	60, 70
17. Pant Samrat (PBR-129-5)	3, 19,
18. Punjab Barsarti	206, 250
19. Pusa Anupam	398
20. Pusa Purple long	43
21. Pusa Purple Round	43
22. Sada Bahar Bangen	206, 250
23. SM 6-7	360

Crop : **Hot Pepper** (Chilli) (*Capsicum frutescens.* L.)

1. Chanchal	6, 36
2. Gujarat Chilli-1	84
3. Jawahar Mirch-218	158, 327, 333
4. K_1	83, 105
5. K_2	42, 51
6. MDU-1	42, 53
7. Punjab Lal	158, 170
8. X-235	133, 144, 247, 253

Crop : **Okra (Bhindi)** (*Abelmoschus esculentus* (L.) Moench)

1. Co_2	331
2. Gujarat Bhindi -1	7, 110, 123
3. MDU-1	42, 54
4. Parbhani Kranti	110
5. Punjab-7	158, 186, 227, 240
6. Pusa Swani	43
7. Selection-2	109, 116

Crop : **Sweet pepper** (Capsicum) (*Capsicum annum.* L.) (Vari. *grossum* Bailey)

Variety	Page No.
1. Arka Basant	133, 143
2. rka Gaurav	133, 143
3. Arka Mohini	133, 143
4. Punjab Mirch-27	158

Crop : **Tomato** (*Lycopersicum esculentum* Mill.)

Variety	Page No.
1. Arka Saurabh	134, 360
2. Arka Vikas (Sel-22)	134, 359, 374
3. ATH-1	134, 331, 353
4. ATV-1	134, 331, 353
5. Azad T_1	7, 205
6. La-Bonita	276
7. Paiyur-1	331
8. Pant Bahar	61, 71
9. Pant T_3 (AC-292)	248, 259
10. PKM-1	42, 55
11. Punjab Chuhara	81, 96, 156, 164
12. Punjab NR-7	158, 179
13. Pusa early dwarf	43
14. Pusa Gaurav (S-152)	157, 204, 213
15. Pusa Ruby	43
16. Sonali (Sel-2)	187, 331, 354

Crop : **Winged Bean**

Variety	Page No.
1. Rajni	7

GREENS/LEAFY VEGETABLES

Crop : **Amaranth** (Tender)—Barichaulai (*Amaranthus tricolor* L.)
Amaranth (Grain)—Chaulai (*Amaranthus cruentus.* L.)
And
Amaranth—Chaulai (*Amaranthus blitum.* L.) Var. oleracea Duthic

Variety	Page No.
1. Annapurna	108, 115

COLE CROP

Crop : **Cabbage** (*Brassica oleracea* (L) *Capitata.* L.)

Variety	Page No.
1. Chinese Cabbage (Chini sarson)	205, 218
2. Pride of India	43
3. Pusa drum head	43
4. Pusa Mukta	275, 281
5. Golden acre	43

Crop : **Cauliflower** (Heading Broccoli) *Brassica oleracea* (L) Var. *Botrytis.* L.

Variety	Page No.
1. K_1 (Pusa snowball)	157, 204, 210
2. Kibogiant	134
3. Pant Gobi-2	186
4. Pant Gobi-3	275, 281
5. Pant Subhra (114-S)	3, 19
6. Pusa Shubhra (6-1-2-1)	157, 204, 211

BULB VEGETABLES

Crop : **Garlic** (*Allium Sativum* L.)

Variety	Page No.
1. Agrifound white	275, 282
Crop : **Onion** (*Allium Cepa* L.)	
1. Agrifound Darkred	205, 248, 259
2. Arka Kalyan (Sel-14)	134, 359, 373
3. Arka Niketan (Sel-13)	134, 358, 372
4. Arka Pragati	134
5. Baswant-780	110, 331, 353
6. Punjab Selection	83
7. Punjab-48	83
8. Pusa Madhvi	328, 337

ROOT VEGETABLES

Crop : **Beetroot** (Garden Beet, Mangels, Stock beet) (*Beta vulgaris* L. *Var rubra Moq*)

Variety	Page No.
1. Detriot Dark red (Crimson Globe)	43
Crop : **Carrot** (*Daucus Carota* L.)	
1. Earley Nantes	43
2. Nantes	43
3. Pusa Yamdagni	157, 204, 211
4. Selection-21	158, 168

Crop : **Radish** (*Raphanus Sativas* L.)

Variety	Page No.
1. Arka Nishant	134, 360
2. Punjab Ageti	205, 221
3. Pusa Chetki	205, 221
Crop : **Sugarbeet** (*Beta Vulgaris* L.)	
1. IISR Comp. 1	204, 212
2. Pant S-10	204, 213

OTHER CROPS

Crop : **Arecanut**

Variety	Page No.
1. V.T.L 11 (Sumangala)	185, 225, 230
2. V.T.L 17 (Sreemangala)	185, 225, 230
Crop : **Black pepper**	
1. Sreekara (KS-14)	398
2. Subhakara (KS-27)	397, 401
Crop : **Cashew**	
1. NRC Cashew Selection-1	397, 401
2. NRC Cashew Selection-2	398

Crop : **Cassava**

Variety	Page No.
1. Co_2	42, 55
2. Sreeprakash (S-856)	184, 192
3. Sree Sahya (H-2304)	3, 20
4. Sree Visakam (H-1687)	3, 20
Crop : **Coconut** (*Cocus nucifera*)	
1. Anantha Ganga	360
2. Chandra Kalpa	184, 190
3. Chandra Laksha	184, 191
4. Chandra Sangara (DXT)	184, 190
5. Kera Ganga	360
6. PHC-1	184, 189

Crop : **Cumin**

Variety	**Page No.**
1. RZ-19	248, 263

Crop : **Fennel**

1. Gujarat Fennel-1	248, 264

Crop : **Scarlet Linum**

1. F 80-12	276
2. Meera	82, 95

Crop : **Sugarcane** (*Sachcarum officienarum*) L.

1. B.O.-91	4, 22
2. Co$_{62175}$	225, 231
3. Co$_{7527}$	225, 231
4. COJ-64	185
5. COS-767	185
6. Sanjivini (Co 7219)	4, 22

Crop : **Tobacco**

Variety	**Page No.**
1. Annand-2	4, 22
2. Annand-119	4, 23
3. Bhavya	248, 263
4. G. 11-1 (Hema)	249, 283
5. I.I. 435	156, 165
6. Jayasri (MR)	156, 165
7. Line-1494	156, 166
8. MC Nair-12	156, 165
9. Pusa tobacco-76 (HP 76-1)	358, 371

Crop : **Turmeric**

1. Roma	249, 264
2. Selection PCT-8 (Suvarna)	185, 225, 231
3. Sudarshana (PCT-13)	398
4. Suguna (PCT-14)	398

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